OMB No. 2040-0042 Approval Expires 12/31/2018

EPA

United States Environmental Protection Agency
Washington, DC 20460

Completion Form For Injection Wells

Administrative Information

1. Permittee: Florence Copper Inc.

Address *(Permanent Mailing Address) (Street, City, and ZIP Code)*: 1575 W Hunt Hwy, Florence, AZ 85132

2. Operator: Florence Copper Inc.

Address *(Street, City, State and ZIP Code)*: 1575 W Hunt Hwy, Florence, AZ 85132

3. Facility Name: Florence Copper Inc.

Telephone Number: (520) 374-3984

Address *(Street, City, State and ZIP Code)*: 1575 W Hunt Hwy, Florence, AZ 85132

4. Surface Location Description of Injection Well(s)

State: Arizona

County: Pinal

Surface Location Description

SW 1/4 of SW 1/4 of NE 1/4 of SW 1/4 of Section 28 Township 4S Range 9E

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location 1045 ft. frm (N/S) N Line of quarter section
and 1045 ft. from (E/W) E Line of quarter section.

Well Activity

- [ ] Class I
- [ ] Class II
  - [ ] Brine Disposal
  - [ ] Enhanced Recovery
  - [ ] Hydrocarbon Storage
- [x] Class III
- [ ] Other

Well Status

- [x] Operating
- [ ] Modification/Conversion
- [ ] Proposed

Type of Permit

- [ ] Individual
- [x] Area : Number of Wells 33

Lease Number: NA

Well Number: WB-01

Submit with this Completion Form the attachments listed in Attachments for Completion Form.

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment (Ref. 40 CFR 144.32)

Name and Official Title *(Please type or print)*	Signature	Date Signed
Ian Ream, Senior Hydrogeologist		9-12-2018

Attachments to be submitted with the Completion report:

I. Geologic Information

1. Lithology and Stratigraphy

A. Provide a geologic description of the rock units penetrated by name, age, depth, thickness, and lithology of each rock unit penetrated.

B. Provide a description of the injection unit.

(1) Name
(2) Depth (drilled)
(3) Thickness
(4) Formation fluid pressure
(5) Age of unit
(6) Porosity (avg.)
(7) Permeability
(8) Bottom hole temperature
(9) Lithology
(10) Bottom hold pressure
(11) Fracture pressure

C. Provide chemical characteristics of formation fluid (attach chemical analysis).

D. Provide a description of freshwater aquifers.

(1) Depth to base of fresh water (less than 10,000 mg/l TDS).
(2) Provide a geologic description of aquifer units with name, age, depth, thickness, lithology, and average total dissolved solids.

II. Well Design and Construction

1. Provide data on surface, intermediate, and long string casing and tubing. Data must include material, size, weight, grade, and depth set.

2. Provide data on the well cement, such as type/class, additives, amount, and method of emplacement.

3. Provide packer data on the packer (if used) such as type, name and model, setting depth, and type of annular fluid used.

4. Provide data on centralizers to include number, type and depth.

5. Provide data on bottom hole completions.

6. Provide data on well stimulation used.

III. Description of Surface Equipment

1. Provide data and a sketch of holding tanks, flow lines, filters, and injection pump.

IV. Monitoring Systems

1. Provide data on recording and nonrecording injection pressure gauges, casing-tubing annulus pressure gauges, injection rate meters, temperature meters, and other meters or gauges.

2. Provide data on constructed monitor wells such as location, depth, casing diameter, method of cementing, etc.

V. Logging and Testing Results

Provide a descriptive report interpreting the results of geophysical logs and other tests. Include a description and data on deviation checks run during drilling.

VI. Provide an as-built diagrammatic sketch of the injection well(s) showing casing, cement, tubing, packer, etc., with proper setting depths. The sketch should include well head and gauges.

VII. Provide data demonstrating mechanical integrity pursuant to 40 CFR 146.08.

VIII. Report on the compatibility of injected wastes with fluids and minerals in both the injection zone and the confining zone.

IX. Report the status of corrective action on defective wells in the area of review.

X. Include the anticipated maximum pressure and flow rate at which injection will operate.

HALEY & ALDRICH, INC.
One Arizona Center
400 E. Van Buren St., Suite 545
Phoenix, AZ 85004
602.760.2450

TECHNICAL MEMORANDUM

14 September 2018
File No. 129687-010

TO: Florence Copper Inc.
Ian Ream, Senior Hydrogeologist

FROM: Haley & Aldrich, Inc.
Lauren Candreva, R.G.

Subject: Drilling, Installation, and Integrity Testing Summary
PTF Westbay Well WB-01
Florence Copper Inc., Florence, Arizona

This document summarizes the drilling, installation, and testing of Production Test Facility (PTF) Westbay well WB-01 for Florence Copper Inc. (Florence Copper) in Florence, Arizona, including the equipment used to perform the work, completion, and the results of well testing activities. Separate well completion reports have been created for each PTF well.

The Arizona Department of Water Resources Registry ID for well WB-01 is 55-227226; the Well Registry Report is included in Appendix A. Well WB-01 is located in the southwest quarter of the northeast quarter of the southwest quarter of Section 28 of Township 4 north, Range 9 east of the Gila and Salt River Baseline and Meridian (D(4-9)28CAC). Well WB-01 is located within the Underground Injection Control (UIC) Permitted Area of Review (AOR) for UIC Permit R9UIC-AZ3-FY11-1 and was completed as a Class III Westbay well for the PTF (Figure 1).

Florence Copper contracted Hydro Resources, Inc. (Hydro Resources) to drill, install, and test well WB-01 in accordance with *Bid Specification: Drilling, Installation, and Testing of Class III Westbay Wells, Production Test Facility, Florence, Arizona* (Haley & Aldrich, Inc. [Haley & Aldrich], 2017). A Midway 3500 drilling rig was used for all drilling and construction activities. Haley & Aldrich provided oversight of drilling activities, geophysical logging, well installation, and testing. All reported depths are in feet below ground surface unless otherwise noted.

I. Geologic Information

1. Lithology and Stratigraphy

A. Geology of Penetrated Units

The geology penetrated during the drilling of the Class III well WB-01 is summarized below and a lithologic log is included in Appendix B.

Lithologic Unit Name	Depth to Bottom of Unit (feet)	Thickness of Unit (feet)	Lithology and Age of Unit
Upper Basin Fill Unit (UBFU)	282	282	Alluvium; Quaternary to Tertiary
Middle Fine-Grained Unit (MFGU)	302	20	Alluvium; Tertiary
Lower Basin Fill Unit (LBFU)	377	75	Alluvium; Tertiary to Cretaceous
Bedrock Oxide Unit (Oxide)	Not encountered	>826	Igneous porphyry; Precambrian

B. Description of Injection Unit

Name	Bedrock Oxide Unit
Depth drilled	1,203 feet
Thickness	>826 feet
Formation fluid pressure	Atmospheric plus head of freshwater; no additional formation pressure
Age of unit	Precambrian with intrusions of Precambrian to Tertiary rocks
Porosity[1]	Approximately 6 to 8.5%
Permeability	Hydraulic conductivity = 0.56 feet per day
Bottom hole temperature	30.5 degrees Celsius
Lithology	Igneous porphyry: quartz monzonite, granodiorite with diabase and andesite dykes (detailed log included in Appendix B)
Bottom hole pressure	Approximately 410 pounds per square inch (PSI) (pressure exerted by the column of freshwater with no additional contribution from formation pressure)
Fracture pressure	0.65 PSI per foot
[1] Porosity values for the bedrock oxide unit are approximate values from calculated neutron porosity values from injection well borehole surveys.	

C. Chemical Characteristics of Formation Fluid

The chemical characteristics of the formation fluid in the injection zone are summarized below and are the sampling results from the center PTF wellfield well R-09. The table below summarizes the primary chemical characteristics detected in a formation fluid sample collected on 23 April 2018; the complete analytical report is included in Appendix C.

Analyte	Result (mg/L)
Metals	
Aluminum	<0.08
Antimony	<0.005
Arsenic	0.0016
Barium	0.071
Beryllium	<0.0005
Cadmium	<0.00025
Calcium	140
Chromium	0.0051
Cobalt	<0.00025
Copper	0.011
Iron	<0.30
Lead	<0.0005
Magnesium	27
Manganese	0.002
Mercury	<0.001
Nickel	0.0033
Potassium	6.8
Selenium	<0.0025
Sodium	170
Thallium	<0.0005
Zinc	<0.04
Anions	
Bicarbonate	150
Chloride	310
Fluoride	<0.5
Nitrate	8.8
Sulfate	190
Field Parameters	
Total Dissolved Solids	1,000
pH	7.8
Radiochemicals	
Uranium	0.016
Notes: *mg/L = milligrams per liter*	

Results of the sampling of well WB-01 are included in the *PTF Mine Block Ambient Groundwater Concentrations and Initial Discharge Characterization of the Underground Workings* (Brown and Caldwell, 2018).

D. Description of Freshwater Aquifers

1) The depth to the base of the freshwater aquifer is defined by the interface where deeper formation fluid exhibits a total dissolved solids (TDS) value of 10,000 milligrams per liter (mg/L). The depth of the 10,000 mg/L interface is deeper than all of the wells drilled at the site and consequently has not been defined.

2) A geologic description of the aquifer units is included below:

Aquifer Unit Name	Age	Depth (feet)	Thickness (feet)	Lithology	Average Total Dissolved Solids[1] (mg/L)
UBFU	Quaternary/Tertiary	0 to 282	282	Alluvium	914
LBFU	Tertiary	302 to 377	75	Alluvium	754

[1] Average TDS values calculated from UBFU and LBFU monitoring well ambient monitoring results near the PTF.

II. Well Design and Construction

1. Well WB-01 Casing Installed

Casing	Material	Diameter (inches)	Weight (pounds per foot)	Depth (feet)	Borehole Diameter (inches)	Drilling Method
Surface	Mild steel	14 O.D. 13⅜ I.D.	47.36	0 to 40	20	Solid-stem auger
Well casing	FRP	4.5 O.D. 3.75 I.D.	3.54	-2.5 to 500	12¼	Reverse flooded rotary
Screen	PVC Sch. 80 with 0.020-inch wide slots	4.5 O.D. 3.83 I.D.	2.78	562 to 572 702 to 712 843 to 853 983 to 993 1,123 to 1,133	12¼	Reverse flooded rotary
Blank intervals	PVC Sch. 80	4.5 O.D. 3.83 I.D.	2.78	497 to 562 572 to 702 712 to 843 853 to 983 993 to 1,123 1,133 to 1,174	12¼	Reverse flooded rotary

Notes:
FRP = fiberglass-reinforced plastic
I.D. = inside diameter
O.D. = outside diameter
PVC = polyvinyl chloride
SCH = Schedule

2. Well Cement

Cement Interval	Cement Type	Additives	Amount Installed (cubic yards)	Method of Emplacement
Surface casing	Type V Neat 21 sack slurry	None	5.5	Submerged tremie
Well casing	Type V Neat 21 sack slurry	None	21.3	Submerged tremie

Field forms documenting pipe tallies, annular materials, and cement tickets are included in Appendix D.

3. Annular Packers

No annular packers were used during construction of well WB-01.

4. Centralizers

Casing	Centralizer Type	Number and Spacing
Well – FRP and PVC	Stainless steel – heavy duty	28 installed – every 40 feet
Notes: *FRP = fiberglass-reinforced plastic* *PVC = polyvinyl chloride*		

5. Bottom Hole Completion

There is no bottom hole completion, as this is not an oil/gas well. The well was completed at the bottom with a stainless-steel endcap of the same diameter as the well screen.

6. Well Stimulation

No well stimulation was used during the drilling and construction of well WB-01.

III. Description of Surface Equipment

1. Surface Equipment

Well WB-01 is a multi-level sampling well and has been equipped with a discrete multi-level sampling system designed and installed by Westbay Instruments. The wellhead has been equipped with a well seal; the Westbay tubing extends from the well seal and is capped when not in use.

IV. Monitoring Systems

1. Well Monitoring Equipment

Equipment Type	Location	Type	Purpose
Annular Conductivity Sensors	Well annulus	Non-recording	Monitor formation conductivity

2. Monitoring Wells

A total of 16 monitoring wells are associated with the PTF: 7 point-of-compliance (POC) wells, 7 United States Environmental Protection Agency (USEPA) supplemental monitoring wells, and 2 operational monitoring wells. The POC wells are located outside the AOR and are not constructed as Class III wells. The supplemental monitoring and operational monitoring wells are located within the AOR and are constructed as Class III wells as required by the UIC Permit. The wells are summarized in the tables below by type.

POC Wells						
Well ID	**Location X/Y (State Plane NAD 83)**	**Depth (feet)**	**Well Nom. Diameter (inches)**	**Cementing Method**	**Screened Interval (feet)**	**Screened Lithologic Unit**
M14-GL	846750.23 746461.52	859	5 9/16 OD	Submerged tremie	778 to 838	LBFU
M15-GU	846697.17 746464.82	615	5 9/16 OD	Submerged tremie	554 to 594	LBFU
M22-O	846751.26 746514.47	1,140	5 9/16 OD to 528 feet; 4½ OD to 1,140 feet	Submerged tremie	932 to 1,130	Oxide
M23-UBF	846688.13 746512.48	250	6 5/8 OD	Submerged tremie	210 to 250	UBFU
M52-UBF	851092.00 774178.00	274	5 9/16	Submerged tremie	198 to 273	UBFU
M54-LBF	847331.96 746682.61	630	5 9/16	Submerged tremie	310 to 629	LBFU
M54-O	847342.99 746702.36	1,199	5 9/16	Submerged tremie	668 to 1,198	Oxide
OD = outside diameter						

Supplemental Monitoring Wells						
Well ID	**Location X/Y (State Plane NAD 83)**	**Depth (feet)**	**Well Nom. Diameter (inches)**	**Cementing Method**	**Screened Interval (feet)**	**Screened Lithologic Unit**
M55-UBF	847541.46 746280.63	261	5	Submerged tremie	240 to 260	UBFU
M56-LBF	847518.70 746303.41	340	5	Submerged tremie	320 to 340	LBFU
M57-O	847378.37 746248.93	1,200	5	Submerged tremie	523 to 1,199	Oxide
M58-O	847672.23 746595.97	1,200	5	Submerged tremie	594 to 1,199	Oxide
M59-O	847934.95 746218.89	1,201	5	Submerged tremie	534 to 1,199	Oxide
M60-O	847599.37 745903.70	1,201	5	Submerged tremie	444 to 1,200	Oxide
M61-LBF	848184.46 746148.88	629	5	Submerged tremie	429 to 629	LBFU

Operational Monitoring Wells						
Well ID	**Location X/Y (State Plane NAD 83)**	**Depth (feet)**	**Well Nom. Diameter (inches)**	**Cementing Method**	**Screened Interval**	**Screened Lithologic Unit**
MW-01-LBF	847487.97 746360.54	444	5	Submerged tremie	330 to 440	LBFU
MW-01-O	847499.04 746369.31	1,200	5	Submerged tremie	500 to 1,200	Oxide

V. Logging and Testing Results

Borehole geophysical logging was conducted on well WB-01 in two phases: 1) open-hole surveys in the 12.25-inch borehole prior to installation of the well casing and screen, and 2) cased-hole surveys in the completed well.

The open-hole geophysical surveys completed at well WB-01 included:

- Spontaneous potential;
- Natural gamma;
- Electrical resistivity (short and long normal);
- Caliper with calculated volume;

- Temperature;
- Sonic; and
- Deviation.

The cased-hole geophysical surveys completed included:

- Sonic (for cement bond with fiberglass-reinforced plastic [FRP]);
- 4 pi density (for cement bond with FRP);
- Dual density (for cement bond with FRP);
- Natural gamma;
- Fluid conductivity;
- Temperature;
- Gyroscopic deviation survey; and
- Video survey.

Open-hole geophysical surveys were used to support identification of the lithologic contacts, to evaluate the condition of the borehole, and to evaluate the deviation of the borehole.

The primary logs used to evaluate lithologic contacts were natural gamma ray, short (16-inch) and long (64-inch) normal electrical resistance, and single-point resistance.

The lithologic contacts for the Middle Fine-Grained Unit (MFGU) were selected based on the short and long resistance and the single-point resistance. All the resistivity values decreased and remained consistently low through the MFGU. This contact is generally characterized by a relatively sharp decrease in resistance at the top of the unit and a gradual increase in resistance below the bottom of the unit.

The contact between the Lower Basin Fill Unit (LBFU) and the bedrock was identified primarily using the natural gamma and correlated with the resistance logs. There is a consistent increase in gamma values at the contact between the LBFU and the bedrock that was identified and documented at the site during exploration in the 1990s. For well WB-01, the gamma values are consistent at approximately 60 American Petroleum Institute (API) units throughout the Upper Basin Fill Unit (UBFU) and MFGU, increase slightly to approximately 70 API units in the LBFU, and then increase at approximately 377 feet to over 120 API units. After the increase at 377 feet, the natural gamma begins to vary more than in the alluvial units. This change in the response of the natural gamma indicates the contact with the bedrock unit. Also, at this approximate depth, there is also a spike in the single-point and the short normal resistance, indicating that the formation has become more resistant. This feature likely occurs primarily because the bedrock contains less water than the alluvial formation above.

Cased-hole geophysical surveys were conducted to evaluate the cement seal and the casing-cement bond, to document baseline fluid temperature and conductivity, and to evaluate the plumbness of the well. The cement bond is discussed in Section VII.

Copies of all the open-hole geophysical logs and cased-hole temperature, fluid conductivity, and natural gamma are included in Appendix E; a figure summarizing the open-hole logs used to evaluate the geology is included as Figure 3. The cased-hole logs used to evaluate the cement bond are included in Appendix F**.**

VI. Well As-Built Diagram

An as-built diagram for well WB-01 is included as Figure 2.

VII. Demonstration of Mechanical Integrity

A demonstration of Part I mechanical integrity of the well was completed using a standard annular pressure test (SAPT) in accordance with Part II.E.3.a.i.A of the UIC Permit. Mechanical integrity will be demonstrated every 2 years during operations and will be confirmed by daily injection pressure monitoring that will be conducted per the UIC Permit once the well is operational. The SAPT for Well WB-01 is summarized below.

The SAPT was conducted by installing an inflatable straddle packer assembly in the well. The bottom packer was installed near the bottom of the FRP-cased portion of the well, the top packer was near the surface, the packers were inflated to form a seal against the casing. The bottom 5 feet of the packer drop pipe was perforated to allow for communication between the tubing and the annulus of the packer assembly. The drop pipe extended through the wellhead and a high pressure/low volume pump was attached to the drop pipe to pressurize the test interval. A valve on the drop pipe at the surface was used to isolate the test interval once the planned test pressure was achieved.

An In-Situ LevelTROLL® pressure transducer with a data logger was installed at the well head and was connected to the packer assembly annulus interval via a National Pipe Thread adapter. The LevelTROLL was used to monitor and record pressure inside the well during the SAPT. To conduct the SAPT, water was pumped from a nearby well immediately prior to testing. Before the water was pumped into the test well, the water temperature was measured to ensure that it was similar to the ambient groundwater temperature of the test well to reduce the potential of differential temperature effects on the well casing. The SAPT for the Class III well was conducted by applying hydraulic pressure to the well casing and shutting in pressure between the packer and wellhead assembly, monitoring the shut-in pressure for a 30-minute period, then measuring the volume of water returned from the well casing after the pressure was released.

On 12 April 2018, the packer was installed to approximately 483 feet and the SAPT was conducted successfully two times. The USEPA SAPT form, a table of the data, and a chart of the data is provided in Appendix G.

Part II mechanical integrity is demonstrated by the cementing records included in this report (in accordance with Part II.E.3.ii.C of the UIC Permit) and will be demonstrated during operations by annular conductivity monitoring on the observation and multi-level sampling wells (in accordance with Part II.E.3.a.ii.A of the UIC Permit).

Cemented Interval	Cement Type	Calculated Grout Volume (cubic yards)	Installed Grout Volume (cubic yards)
Surface casing	Type V 21 sack neat cement slurry	3.1	5.5
Well casing	Type V 21 sack neat cement slurry	20.9	21.3

On 1 March 2018, a suite of geophysical logs was run over the entire length of the completed well to verify the grout seal. A summary of the logs completed to demonstrate cement bond are included in Appendix F.

There is not a bond log tool designed to evaluate cement bond with FRP casing, so the cement interval with FRP casing of WB-01 was evaluated using density logs. The logs collected included sonic, focused density, and 4pi density. Based on the measured density of the FRP cased interval of well WB-01, no significant cement deficiencies were noted in the sonic data collected from approximately 234 feet (static water level) to 470 feet, and no significant deficiencies were noted in the 4pi density data collected from 41 to 470 feet. There were some very localized, low density intervals identified in the 4pi density logs but they were insignificant, only extending 2 to 3 feet. A summary of the FRP cased data is included in the well completion summary in Appendix F.

VIII. Compatibility of Injected Waste

The Florence Copper Project is a Class III mineral extraction project and does not include the injection of any waste products of any kind. The injected fluid (lixiviant) is a carefully constituted in-situ copper recovery solution that will be recovered and recycled following injection.

The compatibility of the lixiviant was evaluated as part of the geochemical modeling completed by Florence Copper and summarized in the *Geochemical Evaluation to Forecast Composition of Process Solutions for In-Situ Copper Recovery Pilot Test Facility at Florence Copper, Florence Arizona* (Daniel B. Stephens Inc., 2014) which was included in Attachment H of the UIC Permit Application.

IX. Status of Corrective Action on Defective Wells in the Area of Review

There are not currently any defective wells in the AOR.

X. Maximum Pressures and Flow Rates for WB-01

Maximum Operating Pressure	Maximum Flow
Atmospheric	Not applicable – sampling well

This well is a multi-level sampling well used to monitor migration of mining solution in the formation. No fluids will be injected, and only small volumes of fluid will be extracted to evaluate solution in the formation; extraction will use Westbay sampling equipment.

XI. Well Development

Well WB-01 was developed by the airlift method, followed by pumping; development was completed by Hydro Resources using a workover rig. To purge drilling fluids and solids, the well was airlift developed from 5 to 6 April 2018 at depths ranging from 400 to 1,175 feet. During development, the airlift pump was cycled to surge the well. On 6 April 2018, approximately 33 gallons of chlorine were added to the well to break down the polymer drilling mud used during drilling and to aid in well development. The discharge was cloudy and sand-free after approximately 21 hours of airlift development.

On 7 April 2018, a submersible pump was temporarily installed to approximately 1,100 feet to pump develop the well. Pump development was conducted at approximately 13 to 14 gallons per minute over a period of 4 days (7 to 10 April), during which time the submersible pump was raised to 550 feet, and periodically turned off to surge the well. In general, the discharge was visually clear and sand-free throughout the pump development period, with turbidity values less than 5 Nephelometric Turbidity Unit at the end of the development period. Well development forms are included in Appendix H.

XII. Well Completion

A well video survey was conducted on 13 April 2018; the video log report is included as Appendix I**.** The video log depths are presented in feet below the top of the casing and thus vary slightly from what is recorded; however, these values are the same with the correction for stick up.

The video log indicates the top of fill in the well is at 1,172 feet.

A gyroscopic survey was also conducted on the completed well on 30 March 2018; the results are included in Appendix I.

The surveyed location for well WB-01 is as follows:

Northing (feet)	Easting (feet)	Measuring Point Elevation (feet amsl)
746167.50	847695.07	1479.34

***Notes**:*

Northing and easting locations provided in State Plane North American Datum 1983, vertical location provided in North American Vertical Datum 1988.

amsl – feet above mean sea level

XIII. Downhole Equipment

The equipment installed in well WB-01 is Westbay multi-level sampling equipment installed by Westbay Instruments. Diagrams of the installed equipment are included in Appendix J.

The type and depth of equipment installed in each well is not constrained by the UIC Permit or the Aquifer Protection Permit (APP). This information is provided in accordance with Section 2.7.4.3 of the APP. Operational considerations may require that the type and depth of equipment be changed in response to conditions observed during operations.

XIV. References

Brown and Caldwell, Inc., 2018. *PTF Mine Block Ambient Groundwater Concentrations and Initial Discharge Characterization of the Underground Workings*. Prepared for Florence Copper. August.

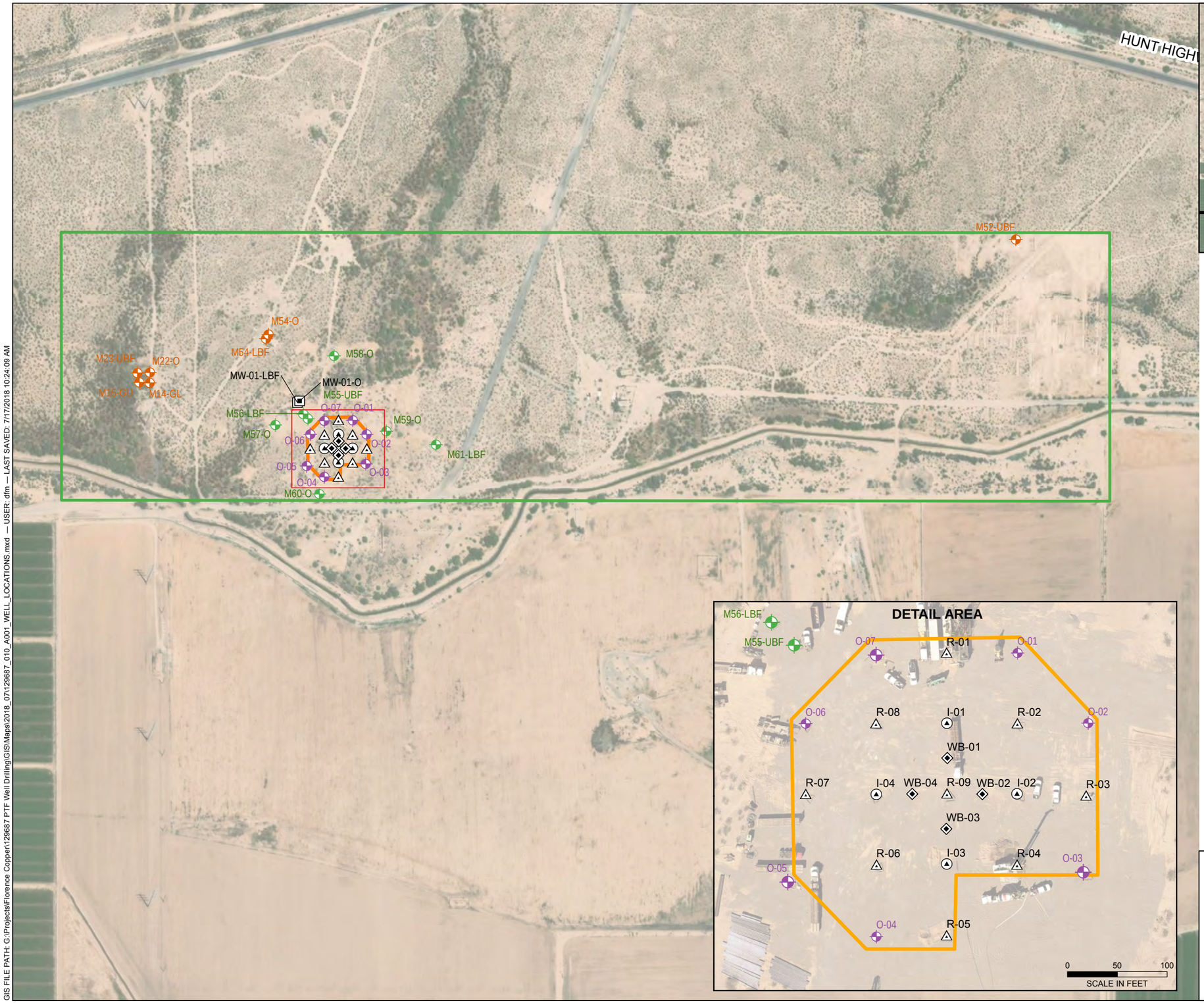
Daniel B. Stephens, Inc., 2014. *Geochemical Evaluation to Forecast Composition of Process Solutions for In-Situ Copper Recovery Pilot Test Facility at Florence Copper, Florence Arizona.* Prepared for Florence Copper. May.

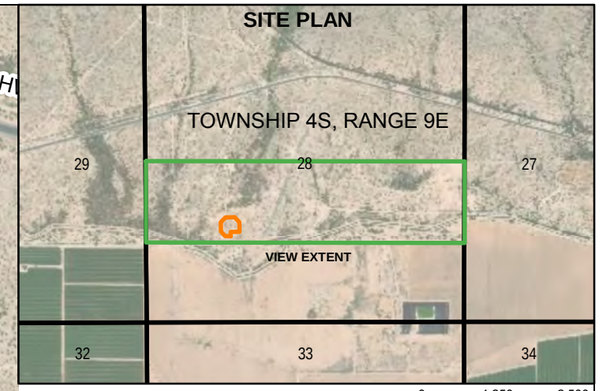
Haley & Aldrich, Inc., 2017. *Bid Specification: Drilling, Installation, and Testing of Class III Westbay Wells, Production Test Facility, Florence, Arizona*. Revised September 2017.

Enclosures:

- Figure 1 – Well Locations
- Figure 2 –Well WB-01 As-Built Diagram
- Figure 3 – Geophysical Data and Lithologic Log
- Appendix A – Arizona Department of Water Resources Well Registry Report
- Appendix B – Lithologic Log
- Appendix C – Chemical Characteristics of Formation Water
- Appendix D – Well Completion Documentation
- Appendix E – Geophysical Logs
- Appendix F – Cement Bond Log Summary
- Appendix G –SAPT Documentation
- Appendix H – Well Development Field Forms
- Appendix I – Well Video Log and Gyroscopic Survey Reports
- Appendix J – Downhole Equipment

FIGURES





LEGEND

- OBSERVATION WELL
- SUPPLEMENTAL MONITORING WELL
- POINT-OF-COMPLIANCE WELL

PTF WELL

- INJECTION
- RECOVERY
- WESTBAY WELL
- OPERATIONAL MONITORING
- PTF WELL FIELD
- STATE LAND LEASE

NOTES

1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL IMAGERY SOURCE: ESRI

0 500 1,000
SCALE IN FEET

HALEY ALDRICH

FLORENCE COPPER PROJECT
FLORENCE, ARIZONA

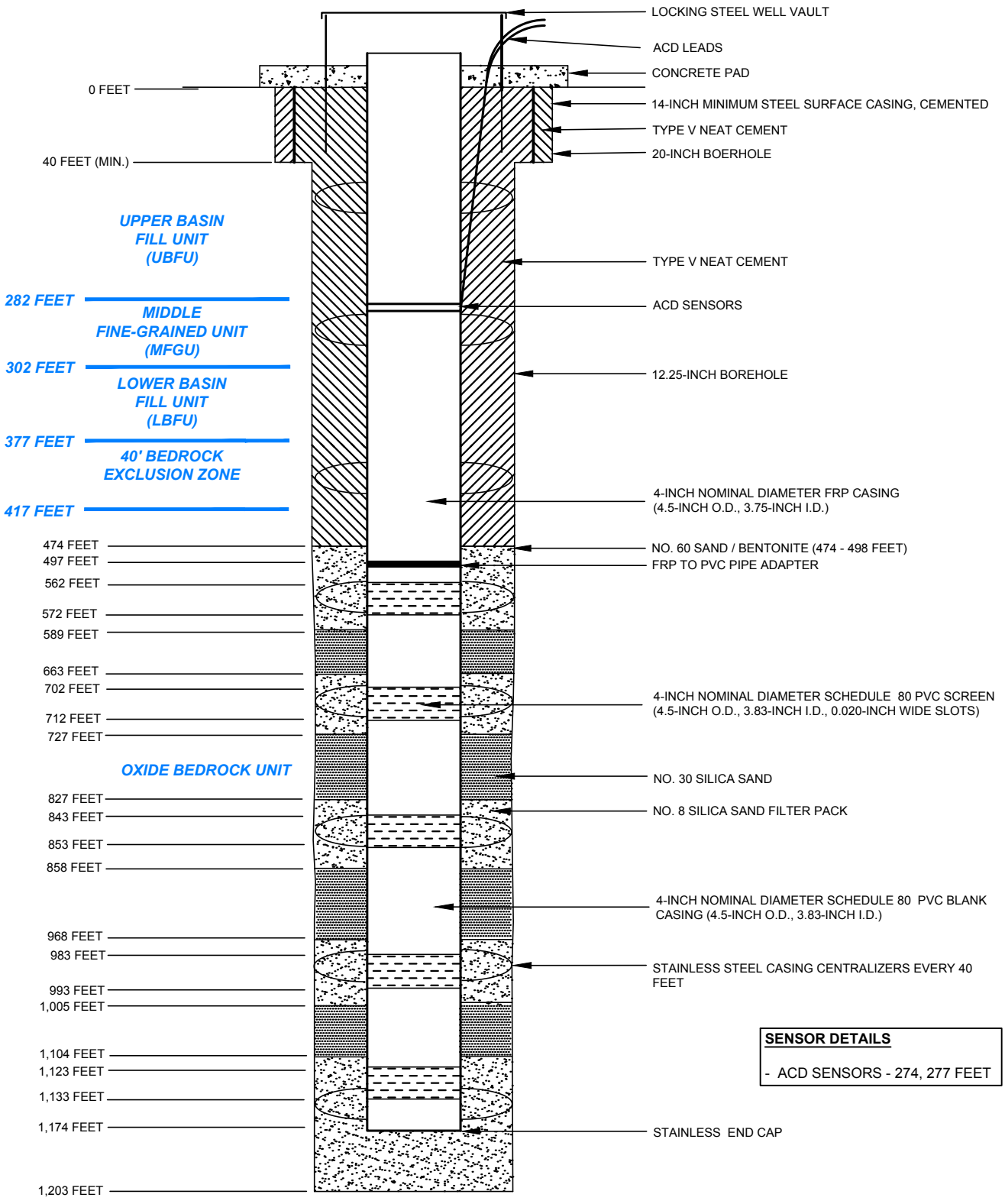
WELL LOCATIONS

FLORENCE COPPER INC.

AUGUST 2018

FIGURE 1

GIS FILE PATH: G:\Projects\Florence Copper\129687 PTF Well Drilling\GIS\Maps\2018_07\129687_010_A001_WELL_LOCATIONS.mxd — USER: dfm — LAST SAVED: 7/17/2018 10:24:09 AM



NOTES

1. WELL REGISTRATION NO.: 55-227226
2. CADASTRAL LOCATION: D(4-9) 28 CAC
3. MEASURING POINT ELEVATION: 1479.34 FEET AMSL
4. I.D. = INSIDE DIAMETER
5. O.D. = OUTSIDE DIAMETER
6. PVC = POLYVINYL CHLORIDE
7. FRP = FIBERGLASS REINFORCED PLASTIC
8. ACD = ANNULAR CONDUCTIVITY DEVICE
9. DOWNHOLE EQUIPMENT INSTALLED BY WESTBAY INSTRUMENTS

HALEY ALDRICH

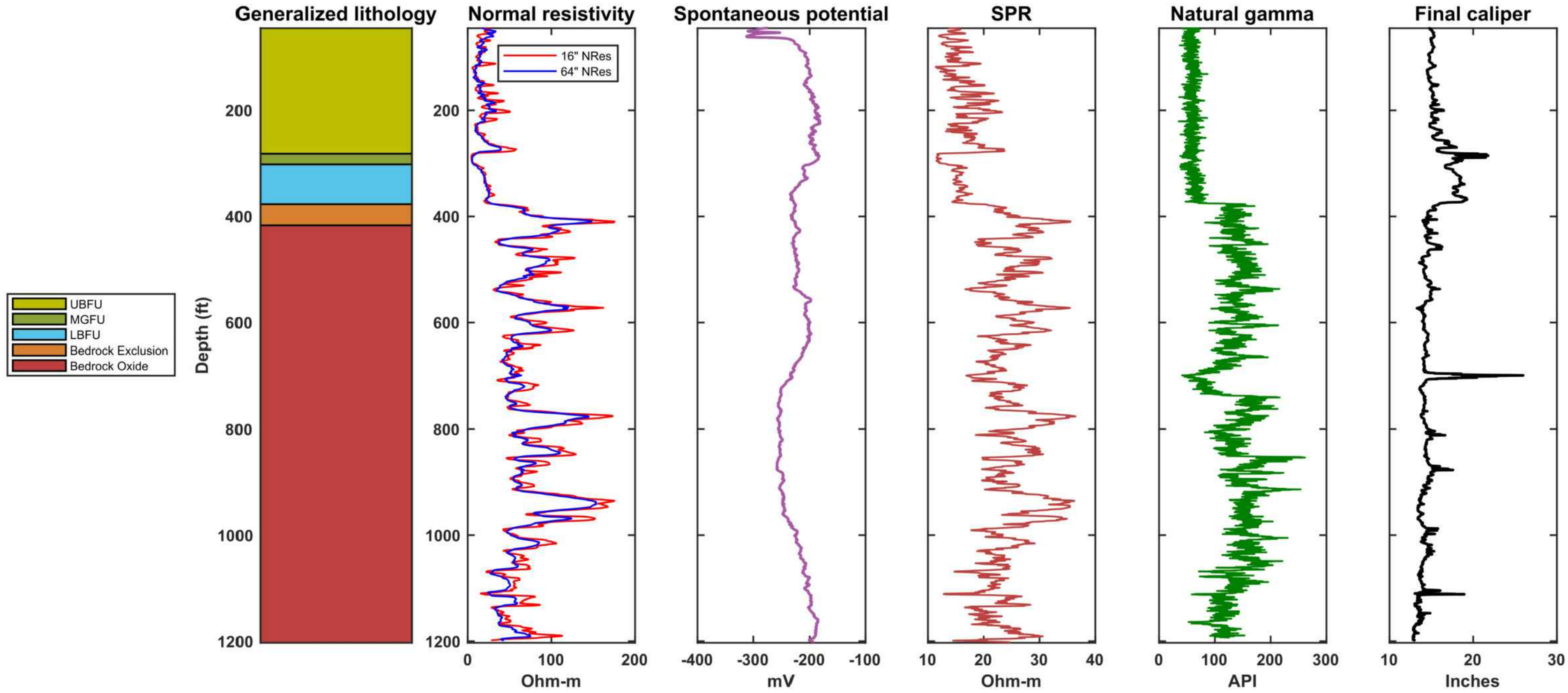
PRODUCTION TEST FACILITY
FLORENCE COPPER, INC.
FLORENCE, ARIZONA

WESTBAY WELL WB-01 AS-BUILT DIAGRAM

FLORENCE COPPER INC.

SCALE: NOT TO SCALE
SEPTEMBER 2018

FIGURE 2



MCELENEY, TERRI Printed: 6/14/2018 3:33 PM Layout: WB01
G:\129687\GLOBAL\CAD\129687-010 GEOPHYICAL DATA 2018-0614.DWG

HALEY ALDRICH

PRODUCTION TEST FACILITY
FLORENCE COPPER, INC.
FLORENCE, ARIZONA

WESTBAY WELL WB-01 GEOPHYSICAL DATA AND LITHOLOGIC LOG

FLORENCE COPPER

SCALE: AS SHOWN
SEPTEMBER 2018

FIGURE 3

APPENDIX A

Arizona Department of Water Resources Well Registry Report

Arizona Department of Water Resources
Water Management Division
P.O. Box 36020 Phoenix, Arizona 85067-6020
(602) 771-8627 • (602) 771-8690 fax
· www.azwater.gov ·

RECEIVED
AUG 20 2018
ADWR

Well Driller Report and Well Log

CJ

THIS REPORT MUST BE FILED WITHIN **30 DAYS** OF COMPLETING THE WELL.

PLEASE PRINT CLEARLY USING BLACK OR BLUE INK.

FILE NUMBER: D (4-9) 28 CAC
WELL REGISTRATION NUM: **55 - 227226**
PERMIT NUMBER (IF ISSUE

SECTION 1. DRILLING AUTHORIZATION

Drilling Firm

Mail To:

NAME: Hydro Resources Inc.
ADDRESS: 13027 County Rd. 18 Unit C
CITY / STATE / ZIP: Ft. Lupton, CO 80621
DWR LICENSE NUMBER: 816
TELEPHONE NUMBER: (303) 857-7544
FAX: (303) 857-2826

SECTION 2. REGISTRY INFORMATION

Well Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: Florence Copper Inc.
MAILING ADDRESS: 1575 W. Hunt Hwy
CITY / STATE / ZIP CODE: Florence, AZ 85132
CONTACT PERSON NAME AND TITLE: Ian Ream - Sr. Hydrologist
TELEPHONE NUMBER: (520) 374-3984
FAX:
WELL NAME (e.g., MW-1, PZ-3, Lot 25 Well, Smith Well, etc.):

Location of Well

WELL LOCATION ADDRESS (IF ANY):

TOWNSHIP (N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
4S	9E	28	SW ¼	NE ¼	SW ¼

LATITUDE			LONGITUDE		
33 ° Degrees	3 ' Minutes	1.06 "N Seconds	-111 ° Degrees	26 ' Minutes	4.67 "W Seconds

METHOD OF LATITUDE/LONGITUDE (CHECK ONE): ☒ *GPS: Hand-Held ☐ *GPS: Survey-Grade
LAND SURFACE ELEVATION AT WELL: 1492 Feet Above Sea Level
METHOD OF ELEVATION (CHECK ONE): ☒ *GPS: Hand-Held ☐ *GPS: Survey-Grade
*GEOGRAPHIC COORDINATE DATUM (CHECK ONE): ☒ NAD-83 ☐ Other (*please specify*):
COUNTY: PINAL
ASSESSOR'S PARCEL ID NUMBER — BOOK: MAP: PARCEL:

SECTION 3. WELL CONSTRUCTION DETAILS

Drill Method

CHECK ALL THAT APPLY
- ☐ Air Rotary
- ☐ Bored or Augered
- ☐ Cable Tool
- ☐ Dual Rotary
- ☒ Mud Rotary
- ☒ Reverse Circulation
- ☐ Driven
- ☐ Jetted
- ☐ Air Percussion / Odex Tubing
- ☐ Other *(please specify)*:

Method of Well Development

CHECK ALL THAT APPLY
- ☒ Airlift
- ☐ Bail
- ☐ Surge Block
- ☒ Surge Pump
- ☐ Other *(please specify)*:

Condition of Well

CHECK ONE
- ☒ Capped
- ☐ Pump Installed

Method of Sealing at Reduction Points

CHECK ONE
- ☐ None
- ☐ Packed
- ☐ Swedged
- ☐ Welded
- ☐ Other *(please specify)*:

Construction Dates

DATE WELL CONSTRUCTION STARTED: 03/19/2018
DATE WELL CONSTRUCTION COMPLETED: 05/23/2018

I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and belief.

SIGNATURE OF QUALIFYING PARTY

DATE: 5/23/2018

Well Driller Report and Well Log

WELL REGISTRATION N
55 - 227226

SECTION 4. WELL CONSTRUCTION DESIGN (AS BUILT) (attach additional page if needed)

Depth

DEPTH OF BORING: 1203 Feet Below Land Surface

DEPTH OF COMPLETED WELL: 1173 Feet Below Land S

Water Level Information

STATIC WATER LEVEL: 232 Feet Below Land Surface

DATE MEASURED: 04/13/2018

TIME MEASURED: 1 PM

IF FLOWING WELL, METHOD OF FLOW REGULATIO
☐ Valve ☐ Other:

Borehole

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	BOREHOLE DIAMETER (inches)
0	40	30
40	474	20
474	1203	12.25

Installed Casing

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	OUTER DIAMETER (inches)	MATERIAL TYPE (T) STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T) BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE IF ANY (inches)
0	40	24.5	X				X						
0	474	14.5	X				X						
0	494	5.44				FRP	X						
496	562	5.56		X			X						
562	572	5.56		X			X						
572	702	5.56		X						X			.020
702	712	5.56		X			X						
712	843	5.56		X						X			.020
843	853	5.56		X			X						.020

Installed Annular Material

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	ANNULAR MATERIAL TYPE (T) NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE GROUT	BENTONITE CHIPS	BENTONITE PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK SAND	FILTER PACK GRAVEL	FILTER PACK SIZE
0	40			X								
0	474			X								
474	498											
498	589						X					
589	663											
663	727						X					
727	827									X		6-9
827	858						X					
858	968									X		6-9
							X			X		6-9

Well Driller Report and Well Log

SECTION 5. GEOLOGIC LOG OF WELL

WELL REGISTRATION
55 - 227226

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	Description Describe material, grain size, color, etc.	Check (T interval w water w encounte (if know
0	282	UPPER BASIN FILL UNIT	
282	302	MIDDLE FINE GRAINED UNIT	
302	377		
377	1203	BEDROCK OXIDE UNIT	

Well Driller Report and Well Log

WELL REGISTRATION N
55 - 227226

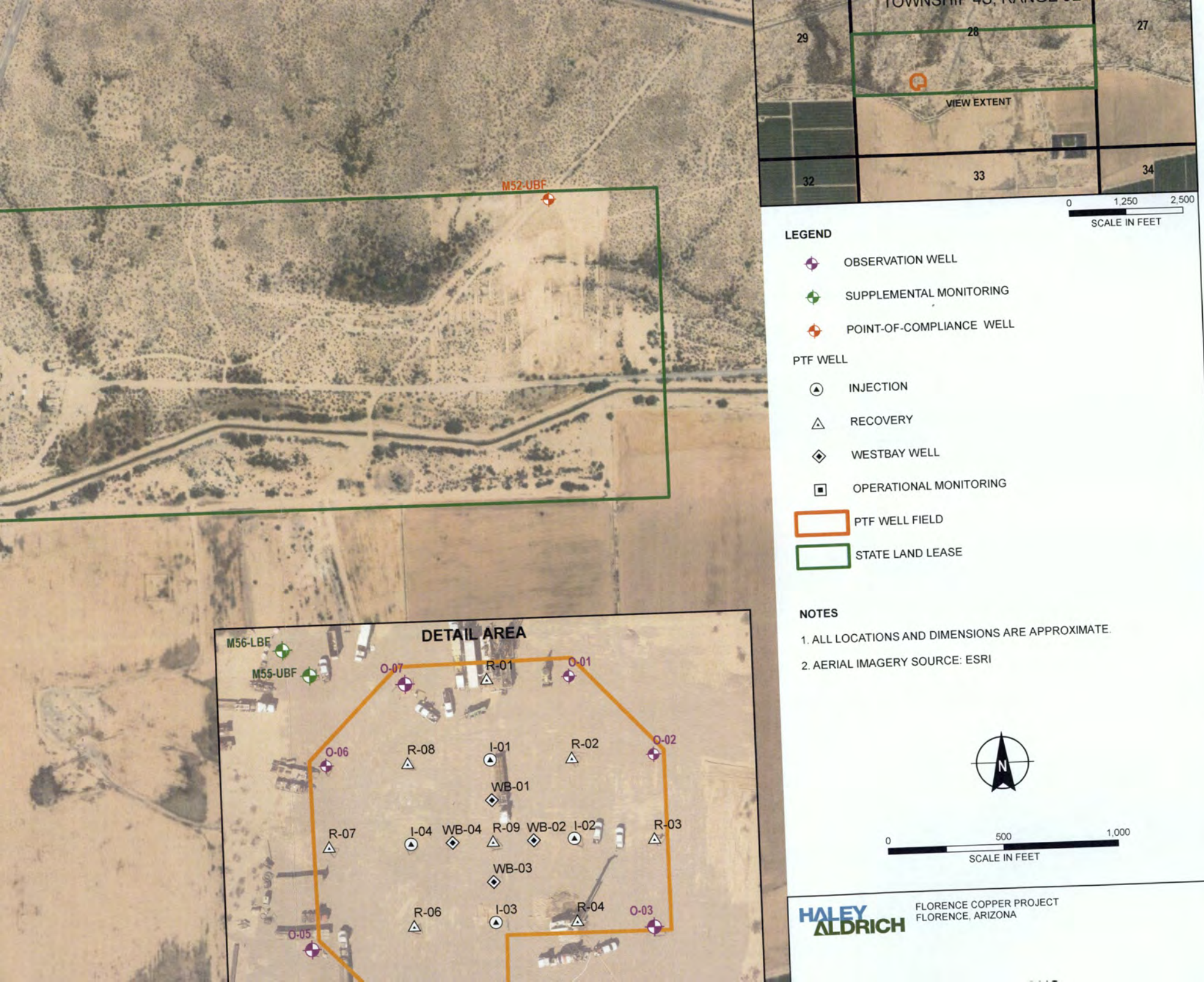
SECTION 6. WELL SITE PLAN

NAME OF WELL OWNER
Florence Copper Inc.

COUNTY ASSESSOR'S PARCEL ID NUMBER

BOOK	MAP	PARCEL

- Please draw the following: (1) the boundaries of property on which the well was located; (2) the well location; (3) locations of all septic tank systems and sewer systems on the property or within 100 feet of the well location, eve neighboring properties; and (4) any permanent structures on the property that may aid in locating the well.
- Please indicate the distance between the well location and any septic tank system or sewer system.


TOWNSHIP 4S, RANGE 9E
29
28
27
32
33
34
VIEW EXTENT
M52-UBF
0
1,250
2,500
SCALE IN FEET
DETAIL AREA
M56-LBF
M55-UBF
O-07
R-01
O-01
O-06
R-08
I-01
R-02
O-02
WB-01
R-07
I-04
WB-04
R-09
WB-02
I-02
R-03
WB-03
R-06
I-03
R-04
O-03
O-05
LEGEND
OBSERVATION WELL
SUPPLEMENTAL MONITORING
POINT-OF-COMPLIANCE WELL
PTF WELL
INJECTION
RECOVERY
WESTBAY WELL
OPERATIONAL MONITORING
PTF WELL FIELD
STATE LAND LEASE
NOTES
1. ALL LOCATIONS AND DIMENSIONS ARE APPROXIMATE.
2. AERIAL IMAGERY SOURCE: ESRI
N
0
500
1,000
SCALE IN FEET
HALEY ALDRICH
FLORENCE COPPER PROJECT
FLORENCE, ARIZONA

Run Date: 04/25/2017

AZ DEPARTMENT OF WATER RESOURCES

WELL REGISTRY REPORT - WELLS55

Location D 4.0 9.0 28 C A C

Well Reg.No 55 - 227226

AMA PINAL AMA

Registered Name AZ STATE LAND DEPT.
1616 W. ADAMS ST.
ATTN: LISA ATKINS
PHOENIX AZ 85007

File Type NEW WELLS (INTENTS OR APPLICATIONS)
Application/Issue Date 04/19/2017

Owner OWNER
Driller No. 823
Driller Name NATIONAL EWP, INC.
Driller Phone 480-558-3500
County PINAL

Intended Capacity GPM 0.00

Well Type ENV - MONITOR
SubBasin ELOY
Watershed UPPER GILA RIVER
Registered Water Uses MONITORING
Registered Well Uses MONITOR
Discharge Method NO DISCHARGE METHOD LISTED
Power NO POWER CODE LISTED

Well Depth	0.00	**Case Diam**	0.00	**Tested Cap**	0.00
Pump Cap.	0.00	**Case Depth**	0.00	**CRT**	
Draw Down	0.00	**Water Level**	0.00	**Log**	
		Acres Irrig	0.00	**Finish**	NO CASING CODE LISTED

Contamination Site: NO - NOT IN ANY REMEDIAL ACTION SITE

Tribe: Not in a tribal zone

Comments Well WB-01
AZ State Land Mineral Lease 11-26500

Current Action

4/25/2017 555 DRILLER & OWNER PACKETS MAILED
Action Comment: TNV

Action History

4/25/2017 550 DRILLING AUTHORITY ISSUED
Action Comment: TNV

4/19/2017 155 NOI RECEIVED FOR A NEW NON-PRODUCTION WELL
Action Comment: TNV

ARIZONA DEPARTMENT OF WATER RESOURCES
1110 W. Washington St. Suite 310
Phoenix, Arizona 85007

THIS AUTHORIZATION SHALL BE IN POSSESSION OF THE DRILLER DURING ALL DRILLING OPERATIONS

WELL REGISTRATION NO: **55-227226** WELL OWNER ID: WB-01

AUTHORIZED DRILLER: **NATIONAL EWP, INC.** LICENSE NO: **823**

NOTICE OF INTENTION TO DRILL ENV - MONITOR WELL(S) HAS BEEN FILED WITH THE DEPARTMENT BY:

WELL OWNER: **AZ STATE LAND DEPT. 1616 W. ADAMS ST. ATTN: LISA ATKINS PHOENIX, AZ, 85007**

THE WELL(S) IS/ARE TO BE LOCATED IN THE:

SW 1/4 of the **NE** 1/4 of the **SW** 1/4 Section **28** Township **4.0** **SOUTH** Range **9.0** **EAST**

NO. OF WELLS IN THIS PROJECT: **1**

THIS AUTHORIZATION EXPIRES AT MIDNIGHT ON THE DAY OF **April 19, 2018**

Stella Murillo

GROUNDWATER PERMITTING AND WELLS

THE DRILLER MUST FILE A LOG OF THE WELL WITHIN 30 DAYS OF COMPLETION OF DRILLING.

GREAT SEAL OF THE STATE OF ARIZONA
DITAT DEUS
1912

ARIZONA DEPARTMENT of WATER RESOURCES
1110 W. Washington St. Suite 310
Phoenix, AZ 85007
602-771-8500
azwater.gov

April 25, 2017

AZ STATE LAND DEPT.
1616 W. ADAMS ST.
ATTN: LISA ATKINS
PHOENIX, AZ 85007

DOUGLAS A. DUCEY
Governor

THOMAS BUSCHATZKE
Director

Registration No. 55- 227226
File Number: D(4-9) 28 CAC

Dear Well Applicant:

Enclosed is a copy of the Notice of Intention to Drill (NOI) a well which you or your driller recently filed with the Department of Water Resources. This letter is to inform you that the Department has approved the NOI and has mailed, or made available for download, a drilling authorization card to your designated well drilling contractor. The driller may not begin drilling until he/she has received the authorization, and must keep it in their possession at the well site during drilling. Although the issuance of this drill card authorizes you to drill the proposed well under state law, the drilling of the well may be subject to restrictions or regulations imposed by other entities.

Well drilling activities must be completed within one year after the date the NOI was filed with the Department. If drilling is not completed within one year, a new NOI must be filed and authorization from this Department received before proceeding with drilling. If the well cannot be successfully completed as initially intended (dry hole, cave in, lost tools, etc.), the well must be properly abandoned and a Well Abandonment Completion Report must be filed by your driller [as required by A.A.C. R12-15-816(F)].

If you change drillers, you must notify the Department of the new driller's identity on a Request to Change Well Information (form 55-71A). Please ensure that the new driller is licensed by the Department to drill the type of well you require. A new driller may not begin drilling until he/she receives a new drilling authorization card from the Department.

If you find it necessary to change the location of the proposed well(s), you may not proceed with drilling until you file an amended NOI with the Department. An amended drilling authorization card will then be issued to the well drilling contractor, which must be in their possession before drilling begins.

Arizona statute [A.R.S. § 45-600] requires registered well owners to file a Pump Installation Completion Report (form 55-56) with the Department within 30 days after the installation of pumping equipment, if authorized. A blank report is enclosed for your convenience. State statute also requires the driller to file a complete and accurate Well Drillers Report and Well Log (form 55-55) within 30 days after completion of drilling. A blank report form was provided to your driller with the drilling authorization card. You should insist and ensure that all of the required reports are accurately completed and timely filed with the Department.

Please be advised that Arizona statute [A.R.S. § 45-593(C)] requires a registered well owner to notify the Department of a change in ownership of the well and/or information pertaining to the physical characteristics of the well in order to keep this well registration file current and accurate. Any change in well information or a request to change well driller must be filed on a Request to Change Well Information form (form 55-71A) that may be downloaded from the ADWR Internet website at www.azwater.gov.

Sincerely,

Groundwater Permitting and Wells Section

Arizona Department of Water Resources
Groundwater Permitting and Wells Section
P.O. Box 36020 Phoenix, Arizona 85067-6020
(602) 771-8500 • (602) 771-8690
· www.azwater.gov ·

Notice of Intent to Drill, Deepen, or Modify a *Monitor / Piezometer / Environmental* Well

$150 FEE

- Review instructions prior to completing form in black or blue ink.
- You must include with your Notice:
  - $150 check or money order for the filing fee.
  - Well construction diagram, labeling all specifications listed in Section 6 and Section 7.

Authority for fee: A.R.S. § 45-596 and A.A.C. R12-15-104.

AMA / INA	B SB
Pinal	RIN 11
RECEIVED DATE	WS
4/19/2017	08 UGR
ISSUED DATE	REMEDIAL ACTION SITE
4/25/2017	000

FILE NUMBER: D(4-9)28 CAC
WELL REGISTRATION NUMBER: 55 - 227226

SECTION 1. REGISTRY INFORMATION

To determine the location of well, please refer to the Well Registry Map (https://gisweb.azwater.gov/WellRegistry/Default.aspx) and/or Google Earth (http://www.earthpoint.us/Townships.aspx)

Well Type

CHECK ONE
- ☒ Monitor
- ☐ Piezometer
- ☐ Vadose Zone
- ☐ Air Sparging
- ☐ Soil Vapor Extraction
- ☐ Other (*please specify*):

Proposed Action

CHECK ONE
- ☒ Drill New Well
- ☐ Deepen
- ☐ Modify

RECEIVED APR 19 2017 ARIZONA DEPARTMENT OF WATER RESOURCES

WELL REGISTRATION NUMBER (*if Deepening or Modifying*)
55 -

Location of Well

WELL LOCATION ADDRESS (IF ANY)

TOWNSHIP(N/S)	RANGE (E/W)	SECTION	160 ACRE	40 ACRE	10 ACRE
4.0 S	9.0 E	28	SW ¼	NE ¼	SW ¼

COUNTY ASSESSOR'S PARCEL ID NUMBER

BOOK	MAP	PARCEL
		1001

COUNTY WHERE WELL IS LOCATED: PINAL

SECTION 2. OWNER INFORMATION

Land Owner

FULL NAME OF COMPANY, ORGANIZATION, OR INDIVIDUAL: AZ State Land Dept (Mineral Lease # 11-026500)
MAILING ADDRESS: 1616 W Adams St
CITY / STATE / ZIP CODE: Phoenix, AZ 85007
CONTACT PERSON NAME AND TITLE: Lisa Atkins, State Land Commissioner
TELEPHONE NUMBER: (602) 542-4631
FAX:

Well Owner (*check this box if Land Owner and Well Owner are same* ☐)

FULL NAME OF COMPANY, GOVERNMENT AGENCY, OR INDIVIDUAL: Florence Copper, Inc.
MAILING ADDRESS: 1575 W Hunt Hwy
CITY / STATE / ZIP CODE: Florence, AZ 85132
CONTACT PERSON NAME AND TITLE: Ian Ream, Senior Hydrogeologist
TELEPHONE NUMBER: (520) 374-3984
FAX: (520) 374-3999

SECTION 3. DRILLING AUTHORIZATION

Drilling Firm

NAME: National EWP
DWR LICENSE NUMBER: 823
ROC LICENSE CATEGORY: A-4
TELEPHONE NUMBER: (480) 558-3500
FAX: 480-558-3525
EMAIL ADDRESS: jstephens@nationalewp.com

Consultant (*if applicable*)

CONSULTING FIRM: Haley & Aldrich, Inc.
CONTACT PERSON NAME: Mark Nicholls
TELEPHONE NUMBER: 602-760-2423
FAX: 602-760-2448
EMAIL ADDRESS: mnicholls@haleyaldrich.com

SECTION 4.

Questions	Yes	No	Explanation:
1. Are all annular spaces between the casing(s) and the borehole for the placement of grout at least 2 inches?	☒	☐	2-inch annular spaces are special standards required for wells located in and near groundwater contamination sites (such as CERCLA, WQARF, DOD, LUST).
2. Is the screened or perforated interval of casing greater than 100 feet in length?	☒	☐	100-foot maximum screen intervals are a special standard for wells located in and near groundwater contamination sites (such as CERCLA, WQARF, DOD, LUST).
3. Are you requesting a variance to use thermoplastic casing in lieu of steel casing in the surface seal?	☐	☒	The wells must be constructed in a vault. Pursuant to A.A.C. R12-15-801 (27) a "vault" is defined as a tamper-resistant watertight structure used to complete a well below the land surface.
4. Is there another well name or identification number associated with this well? (e.g., MW-1, PZ2, 06-04, etc.)	☒	☐	If yes, please state WB-01
5. Have construction plans been coordinated with the Arizona Department of Environmental Quality?	☒	☐	If yes, please state agency contact & phone number David Haag, 602-771-4669
6. For monitor wells, is dedicated pump equipment to be installed?	☐	☒	If yes, please state design pump capacity (*Gallons per Minute*)
7. Is this well a new well located in an Active Management Area **AND** intended to pump water for the purpose of remediating groundwater?	☐	☒	You must also file a supplemental form A.R.S. § 45-454(c) & (f) unless the well is a replacement well and the total number of operable wells on the site is not increasing. (*See instructions*)
8. Will the well registration number be stamped on the vault cover or on the upper part of the casing?	☒	☐	If no, where will the registration number be placed?

Notice of Intent to Drill, Deepen, or Modify a *Monitor / Piezometer / Environmental* Well

WELL REGISTRATION NUMBER
55 - 227226

SECTION 6. WELL CONSTRUCTION DETAILS

Drill Method

CHECK ONE

- ☐ Air Rotary
- ☐ Bored or Augered
- ☐ Cable Tool
- ☐ Dual Rotary
- ☒ Mud Rotary
- ☐ Reverse Circulation
- ☐ Driven
- ☐ Jetted
- ☐ Air Percussion / Odex Tubing
- ☐ Other *(please specify)*:

DATE CONSTRUCTION TO BEGIN
05/01/2017

Method of Well Development

CHECK ONE

- ☒ Airlift
- ☐ Bail
- ☐ Surge Block
- ☐ Surge Pump
- ☐ Other *(please specify)*:

Method of Sealing at Reduction Points

CHECK ONE

- ☒ None
- ☐ Welded
- ☐ Swedged
- ☐ Packed
- ☐ Other *(please specify)*:

Grout Emplacement Method

CHECK ONE

- ☒ Tremie Pumped *(Recommended)*
- ☐ Gravity
- ☐ Pressure Grout
- ☐ Other *(please specify)*:

Surface or Conductor Casing

CHECK ONE

- ☐ Flush Mount in a vault
- ☒ Extends at least 1' above grade

SECTION 7. PROPOSED WELL CONSTRUCTION PLAN (attach additional page if needed)

Attach a well construction diagram labeling all specifications below.

Borehole

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	BOREHOLE DIAMETER (inches)
0	20	18
20	1210	9.875
PERFORATED: 565-575, 705-715 BLANK: 500-565, 575-705, 715-845		

Casing

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	OUTER DIAMETER (inches)	MATERIAL TYPE (T) STEEL	PVC	ABS	IF OTHER TYPE, DESCRIBE	PERFORATION TYPE (T) BLANK OR NONE	WIRE WRAP	SHUTTER SCREEN	MILLS KNIFE	SLOTTED	IF OTHER TYPE, DESCRIBE	SLOT SIZE IF ANY (inches)
0	20	14	☒	☐	☐		☒	☐	☐	☐	☐		
0	500	4	☐	☐	☐	FIBERGLASS REINFORCED	☒	☐	☐	☐	☐		
845-855, 985-995, 1125-1135 855-985, 995-1125, 1135-1200		4	☐	☒	☐		☐	☐	☐	☐	X		0.020

Annular Material

DEPTH FROM SURFACE FROM (feet)	DEPTH FROM SURFACE TO (feet)	ANNULAR MATERIAL TYPE (T) NONE	CONCRETE	NEAT CEMENT OR CEMENT GROUT	CEMENT-BENTONITE GROUT	BENTONITE GROUT	BENTONITE CHIPS	BENTONITE PELLETS	IF OTHER TYPE OF ANNULAR MATERIAL, DESCRIBE	FILTER PACK SAND	FILTER PACK GRAVEL	FILTER PACK SIZE
0	490	☐	☐	☒	☐	☐	☐	☐		☐	☐	
490	495	☐	☐	☐	☐	☐	☐	☐		☒	☐	No. 30-70
MULTIPLE INTERVALS, SEE DESCRIPTION		☐	☐	X	☐	☐	☐	☐	FILTER PACK: 495-585, 695-725, 835-865, 975-1005,1115-1210 NEAT CEMENT: 585-695, 725-835, 865-975, 1005-1115	X	☐	No. 10-20

IF THIS WELL HAS NESTED CASINGS, SPECIFY NUMBER OF CASING STRINGS

EXPECTED DEPTH TO WATER *(Feet Below Ground Surface)*: 220

SECTION 8. PERMISSION TO ACCESS

☐ By checking this box, I hereby provide ADWR permission to enter the property for the purpose of taking water level measurements at this well. *(See instructions.)*

SECTION 9. LAND OWNER AND WELL OWNER SIGNATURE

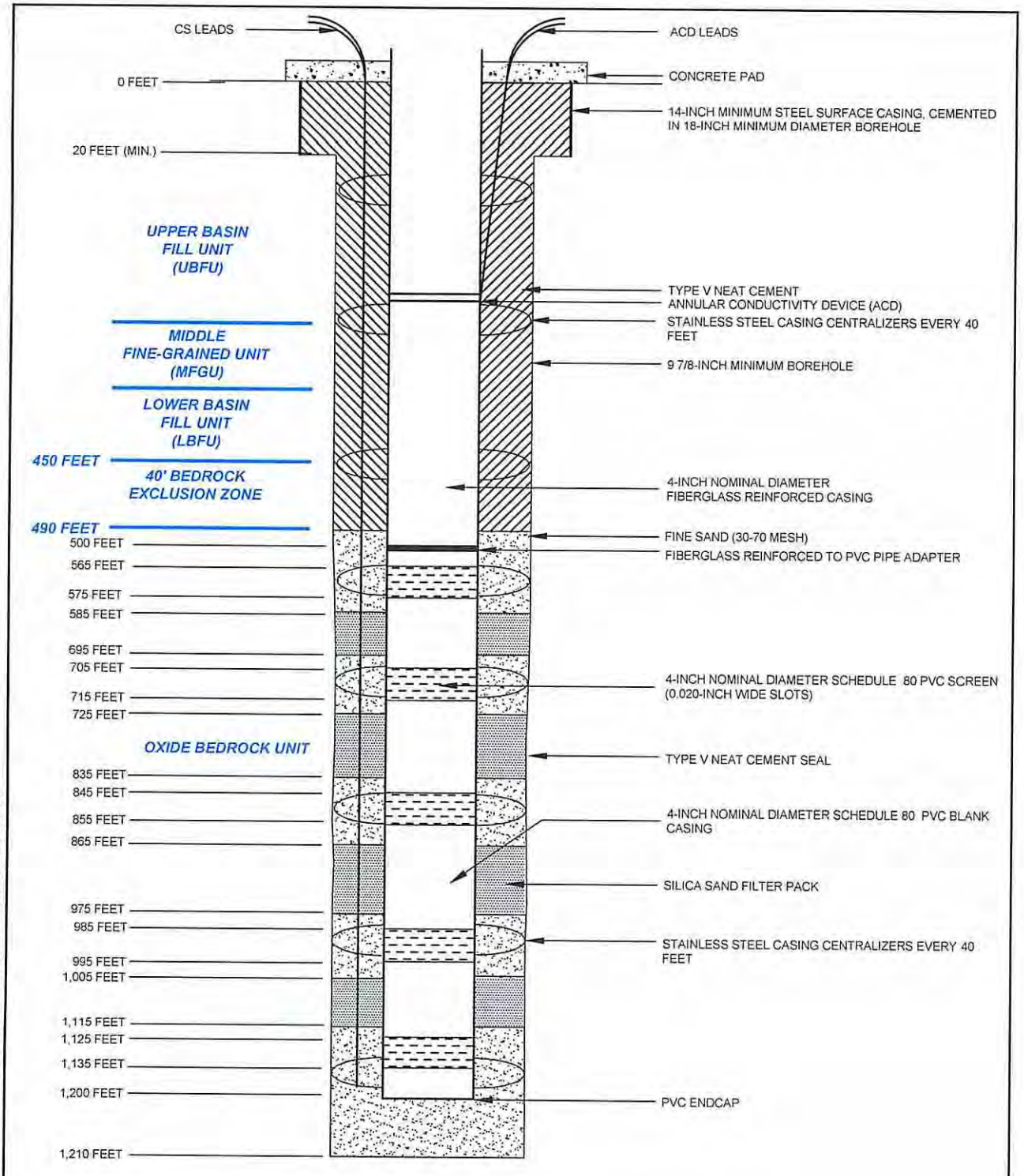
I state that this notice is filed in compliance with A.R.S. § 45-596 and is complete and correct to the best of my knowledge and

Land Owner	Well Owner *(if different from Land Owner; See instructions)*
PRINT NAME AND TITLE	PRINT NAME AND TITLE Ian Ream, Senior Hydrogeologist
SIGNATURE OF LAND OWNER	SIGNATURE OF WELL OWNER
DATE	DATE 4-17-2017
☐ By checking this box, you agree to allow ADWR to contact you via electronic mail.	☒ By checking this box, you agree to allow ADWR to contact you via electronic mail.
EMAIL ADDRESS	EMAIL ADDRESS IanReam@florencecopper.com

SECTION 5. Well Construction Diagram

Provide a well construction diagram showing all existing well construction features listed in Section 6 and Section 7.

See attached well diagram.



G:\PROJECTS\CURIS RESOURCES\38706-CURIS FEASIBILITY\DRAWINGS\2014 UIC APP\FIGURES MI9A-4.DWG

HALEY ALDRICH

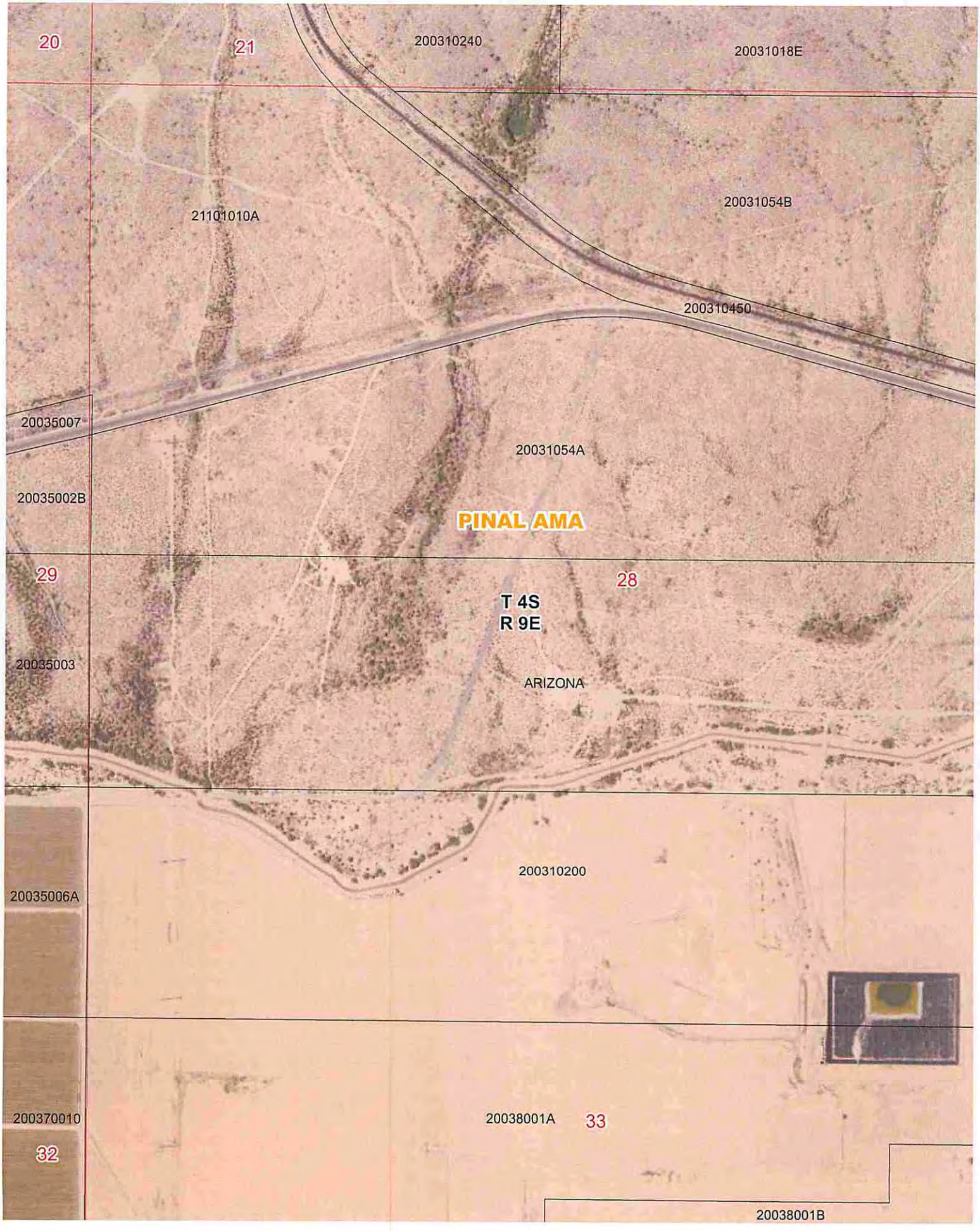
FLORENCE COPPER, INC.
FLORENCE, ARIZONA

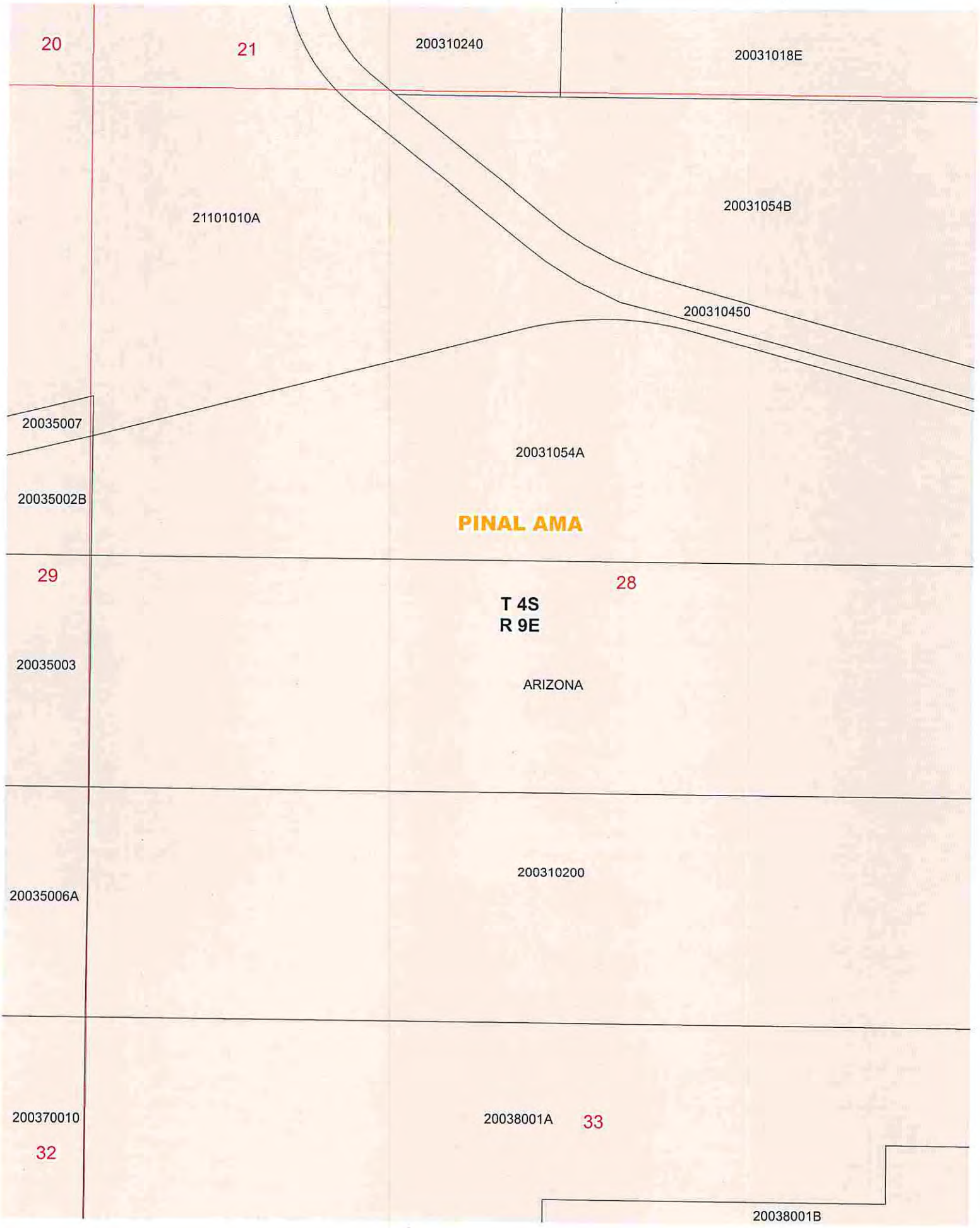
WESTBAY WELL CONSTRUCTION DIAGRAM

FLORENCE COPPER INC.

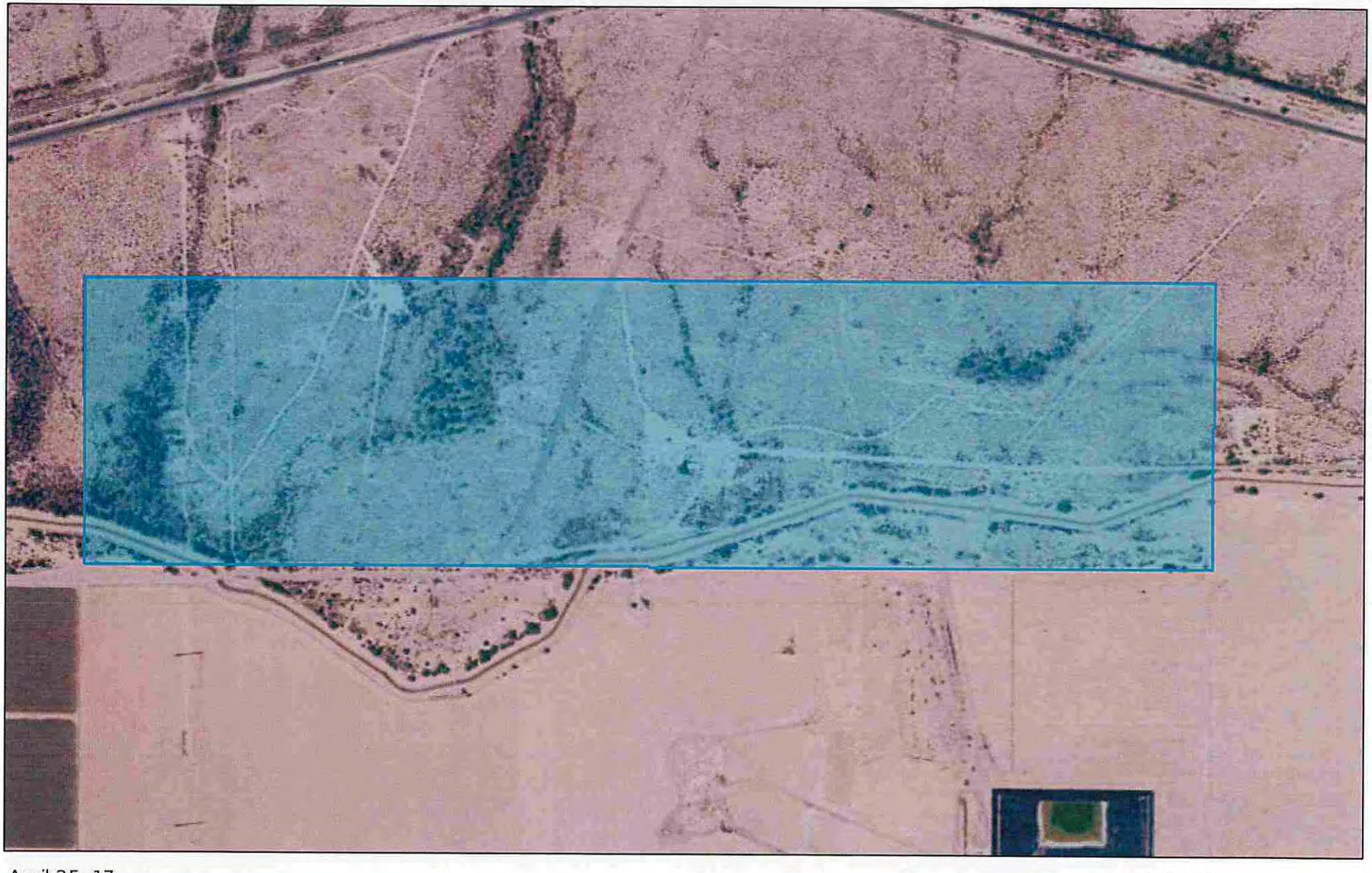
SCALE: NOT TO SCALE

FIGURE 1


20
21
200310240
20031018E
21101010A
20031054B
200310450
20035007
20031054A
20035002B
PINAL AMA
29
28
T 4S
R 9E
20035003
ARIZONA
200310200
20035006A
200370010
20038001A
33
32
20038001B


20
21
200310240
20031018E
21101010A
20031054B
200310450
20035007
20031054A
20035002B
PINAL AMA
29
28
T 4S
R 9E
20035003
ARIZONA
200310200
20035006A
200370010
20038001A
33
32
20038001B

Arizona State Land Department



April 25, 17

1:9,028

0 0.075 0.15 0.3 mi

0 0.1 0.2 0.4 km

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User

Torren Valdez

From: Robert Harding <RHarding@azland.gov>
Sent: Tuesday, April 25, 2017 9:49 AM
To: Torren Valdez
Subject: ASLD (Landowner) Approval for NOI's - Lease #11-26500

FYI

From: Robert Harding
Sent: Wednesday, March 15, 2017 2:31 PM
To: samurillo@azwater.gov
Cc: Fred Breedlove <FBreedlove@azland.gov>; Joe Dixon <jdixon@azland.gov>; Heide Kocsis <HKocsis@azland.gov>
Subject: ASLD (Landowner) Approval for NOI's - Lease #11-26500

Stella,

As you are aware, Florence Copper is in the presence of registering a number of existing wells on State Trust Lease #11-26500 which were originally installed using single registration numbers to permit multiple monitor well installations. A number of these wells will then be permanently abandoned in accordance with Arizona Department of Water Resources (ADWR) requirements. The lessee, Florence Copper, has discussed the specifics of this registration/abandonment process with the Arizona State Land Department (ASLD), and the Department has no objection to the proposed activities.

Please accept this email as documentation of Landowner's approval for the Notice of Intent (NOI) application filings for well registration and abandonment, currently being submitted to ADWR by Florence Copper on ASLD Lease #11-26500, Section 28, T4S, R9E.

Thank you.
Best regards,

Bob Harding
Hydrologist
Water Rights Section
Arizona State land Department
602.542.2672
rharding@azland.gov

Arizona State Land Department

Torren Valdez

From: Ian Ream <IanReam@florencecopper.com>
Sent: Friday, January 13, 2017 9:06 AM
To: Torren Valdez
Subject: Re: Map of monitor well locations

Hi Torren,

The pumps will be QED micro purge. They typically do a liter or two a minute. Very low flow. Looking for discreet interval samples. The flow rate is based on drawdown. The goal is not to draw down the well much more than a half a foot or 1 foot.

Thanks,

Ian Ream
Senior Hydrogeologist
Florence Copper

On Jan 13, 2017, at 8:56 AM, Torren Valdez <tvaldez@azwater.gov> wrote:

> Ian,
>
> Would you happen to know the pump capacity (gpm) for the low-flow pumps that will be installed on those monitoring wells?
>
> Thank you,
>
> Torren Valdez
> Water Planning & Permitting Division
> Arizona Department of Water Resources
> 602.771.8614
>
> <image002.jpg>
>
> ---
>
> **From:** Ian Ream [mailto:IanReam@florencecopper.com]
> **Sent:** Thursday, January 12, 2017 11:13 AM
> **To:** Torren Valdez <tvaldez@azwater.gov>
> **Subject:** Map of monitor well locations
>
> Hi Torren,
>
> Here is a map with the well locations.
>
> Please don't hesitate to contact me if you need anything else or have any questions.
>
> Cheers,
>
> Ian

Ian Ream Senior Hydrogeologist

<image003.jpg>

Florence Copper Inc.
1575 W. Hunt Highway Florence AZ USA 85132
C 520-840-9604 T 520-374-3984 F 520-374-3999
E ianream@florencecopper.com Web florencecopper.com

"Notice Regarding Transmission

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NOTICE

A.R.S. § 41-1030(B), (D), (E) and (F) provide as follows:

B. An agency shall not base a licensing decision in whole or in part on a licensing requirement or condition that is not specifically authorized by statute, rule or state tribal gaming compact. A general grant of authority in statute does not constitute a basis for imposing a licensing requirement or condition unless a rule is made pursuant to that general grant of authority that specifically authorizes the requirement or condition.

D. This section may be enforced in a private civil action and relief may be awarded against the state. The court may award reasonable attorney fees, damages and all fees associated with the license application to a party that prevails in an action against the state for a violation of this section.

E. A state employee may not intentionally or knowingly violate this section. A violation of this section is cause for disciplinary action or dismissal pursuant to the agency's adopted personnel policy.

F. This section does not abrogate the immunity provided by section 12-820.01 or 12-820.02.

ARIZONA DEPARTMENT of WATER RESOURCES
1110 W. Washington St. Suite 310
Engineering and Permits Division
Phoenix, AZ 85007
602-771-8500

NOTICE TO WELL DRILLERS

This is a reminder that a valid drill card be present for the drilling of each and every well constructed on a site.* The problem seems to occur during the construction of a well when an unexpected problem occurs. Either the hole collapses, the hole is dry, a drill bit is lost and can't be recovered, or any number of other situations where the driller feels that he needs to move over and start another well. If you encounter this type of scenario, please be aware drillers do not have the authority to start another well without first obtaining drilling authority for the new well. Please note the following statutes and regulations pertaining to well drilling and construction:

ARIZONA REVISED STATUTE (A.R.S.)

A.R.S. § 45-592.A.

A person may construct, replace or deepen a well in this state only pursuant to this article and section 45-834.01. The drilling of a well may not begin until all requirements of this article and section 45-834.01, as applicable, are met.

***

A.R.S. § 594.A.

The director shall adopt rules establishing construction standards for new wells and replacement wells, the deepening and abandonment of existing wells and the capping of open wells.

***

A.R.S. § 600.A

A well driller shall maintain a complete and accurate log of each well drilled.

ARIZONA ADMINISTRATIVE CODE (A.A.C.)

A.A.C. R12-15-803.A.

A person shall not drill or abandon a well, or cause a well to be drilled or abandoned, in a manner which is not in compliance with A.R.S. Title 45, Chapter 2, Article 10, and the rules adopted thereunder.

***

A.A.C. R12-15-810.A.

A well drilling contractor or single well licensee may commence drilling a well only if the well drilling contractor or licensee has possession of a drilling card at the well site issued by the Director in the name of the well drilling contractor or licensee, authorizing the drilling of the specific well in the specific location.

***

A.A.C. R12-15-816.F.

In the course of drilling a new well, the well may be abandoned without first filing a notice of intent to abandon and without an abandonment card.

*** THIS REQUIREMENT DOES NOT PERTAIN TO THE DRILLING OF MINERAL EXPLORATION, GEOTECHNICAL OR HEAT PUMP BOREHOLES**

Transaction Receipt - Success

Arizona Water Resources
Arizona Water Resources
MID:347501639533
1700 W Washington St
Phoenix , AZ 85012
602-771-8454

04/19/2017 11:49AM
Remittance ID
Arizona041917144729704Chr
Transaction ID:
183294013

KELSEY SHERRARD
500 Main Street
WOODLAND, California 95695
United States
Visa - 3420
Approval Code: 050257

Sale
Amount: $1,650.00

---

multiple
N/A
Cash receipts
0
dgchristiana@azwater.gov

Cardmember acknowledges receipt of goods and/or services in the amount of the total shown hereon and agrees to perform the obligations set forth by the cardmember's agreement with the issuer.

Signature _____

click here to continue.

Printed: 4/19/2017 12:26:46 PM

Arizona Department of Water Resources

1110 West Washington Street, Suite 310
Phoenix AZ 85007

Customer:
KELSEY SHERRARD
NATIONAL EWP
500 MAIN STREET
WOODLAND, CA 95695

Receipt #: 17-50968
Office: MAIN OFFICE
Receipt Date: 04/19/2017
Sale Type: Mail
Cashier: WRDGC

Item No.	Function Code	AOBJ	Description	Ref ID	Qty	Unit Price	Ext Price
8505	122221	4439-6F	MONITOR, PIEZOMETER, AIR SPARGING, SOIL VAPOR EXTR	multiple wells	11	150.00	1,650.00
						RECEIPT TOTAL:	**1,650.00**

Payment type: CREDIT CARD
Amount Paid: $1,650.00
Payment Received Date: 04/19/2017

Authorization 183294013

Notes:

No refund without valid receipt

APPENDIX B

Lithologic Log

HALEY ALDRICH

LITHOLOGIC LOG

WB-01

Project	Production Test Facility, Florence, Arizona	File No. 129687
Client	Florence Copper, Inc.	Sheet No. 1 of 14
Contractor	Cascade Drilling LLC	Cadastral Location D (4-9) 28 CAC

Drilling Method	Reverse Rotary	Land Surface Elevation	1478.57	feet, amsl	Start 19 March 2018
Borehole Diameter(s)	20/12.25 in.	Datum	State Plane NAD 83		Finish 31 March 2018
Rig Make & Model	Challenger 280	Location	N 746,168	E 847,695	H&A Rep. C. Giusti

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION	COMMENTS
0		SM		**SILTY SAND (0-80 feet)** Primarily fine to coarse sand with ~30% fines and ~5% gravel up to 12mm. Sand is subrounded to angular and gravel is subrounded to subangular. Fines have low plasticity, low toughness, medium dry strength, are brown (7.5YR 5/4), and moderate reaction to HCL. **UBFU**	**Well Registry ID:** 55-227226 **Surface Completion:** Concrete Pad with Locking Vault **Well casing stickup:** 1.46 feet als *COLOR IDENTIFICATION MADE WITH WET SAMPLES USING MUNSELL CHART*
	1475				
5					
	1470				
10					
	1465				
15					
	1460				
20					
	1455				
25					
	1450				
30					
	1445				
35					
	1440				
40					**Surface Casing:** 14-inch mild steel; 0 - 40 feet **Well Casing:** Nominal 4-inch diameter Fiberglass Reinforced; 0 - 497 feet
	1435				
45					
	1430				
50					
	1425				
55					
	1420				
60					**Unit Intervals:** UBFU: 0 - 282 feet MGFU: 282 - 302 feet LBFU: 302 - 377 feet Oxide Bedrock: 377 - 1203 feet
	1415				
65					
	1410				
70					
	1405				
75					

NOTE: Lithologic descrptions, group symbols, and grain-size determinations based on the USCS visual-manual method (Haley & Aldrich OP2001A - Field Practice for Soil Identification and Description).

WB-01

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION	
75					
	1400				
80		SW-SM	80	**WELL GRADED SAND with SILT and GRAVEL (80-90 feet)** Primarily fine to medium sand with ~10% fines and 15% gravel up to 14mm. Sand is subrounded to angular and gravel is subrounded to subangular. Fines have low plasticity, low toughness, low dry strength, are brown (7.5YR 4/3), and weak reaction to HCL. **UBFU**	
	1395				
85					
	1390				
90		SC	90	**CLAYEY SAND (90-110 feet)** Primarily fine to coarse sand with ~35% fines and ~10% gravel up to 11mm. Sand is subrounded to angular and gravel is subrounded to subangular. Fines have medium plasticity, medium toughness, high dry strength, are brown (7.5YR 5/4), and weak reaction to HCL. **UBFU**	
	1385				
95					
	1380				
100					**Seal:** Type V neat cement 0 - 474 feet Fine sand/bentonite 474 - 498 feet
	1375				
105					
	1370				
110		SP-SM	110	**POORLY GRADED SAND with CLAY (110-115 feet)** Primarily fine sand with ~10% fines and ~5% gravel up to 8mm. Sand is subrounded to angular and gravel is subrounded. Fines have medium plasticity, medium tough, medium dry strength, are brown (7.5YR 5/4), and weak reaction to HCL. **UBFU**	
	1365				
115		CH	115	**SANDY FAT CLAY (115-145 feet)** Primarily fines with ~40% sands and ~5% gravel up to 11mm. Sand is subrounded to angular and gravel is subrounded to subangular. Fines have medium plasticity, medium toughness, high dry strength, are brown (7.5YR 5/4), and weak reaction to HCL. **UBFU**	
	1360				
120					
	1355				
125					
	1350				
130					
	1345				
135					
	1340				
140					
	1335				
145		GW	145	**WELL GRADED GRAVEL with SAND (145-150 feet)** Primarily gravel up to 16mm with ~35% sands and ~5% fines. Sand is subrounded to angular and gravel is subrounded to subangular. Fines are nonplastic, no toughness, no dry strength, are brown (7.5YR 4/3), and weak reaction to HCL. **UBFU**	
	1330				
150		CH	150	**SANDY FAT CLAY (150-165 feet)** Primarily fines with ~40% sands and trace gravel up to 6mm. Sand is subrounded to angular and gravel is subrounded. Fines have medium plasticity, medium toughness, high dry strength, and are brown (7.5 YR 5/4), and weak reaction to HCL. **UBFU**	
	1325				
155					
	1320				
160					

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
165	1315	GP	165	**POORLY GRADED GRAVEL with SAND (165-180 feet)** Primarily gravel up to 16mm with ~40% sands and ~5% fines. Sand is subrounded to angular and gravel is subrounded to subangular. Fines are nonplastic, no toughness, no dry strength, are brown (7.5YR 4/3), and weak reaction to HCL. **UBFU**
180	1300	SC	180	**CLAYEY SAND (180-190 feet)** Primarily fine sand with ~40% fines and trace gravel up to 5mm. Sand is subrounded to angular and gravel is subrounded. Fines have medium plasticity, medium toughness, medium dry strength, are brown (7.5YR 5/4), and strong reaction to HCL. **UBFU**
190	1290	SW	190	**WELL GRADED SAND (190-195 feet)** Primarily coarse to fine sand with ~5% fines and ~5% gravel up to 8mm. Sand is subrounded to angular and gravel is subrounded to subangular. Fines are nonplastic, no toughness, no dry strength (7.5YR 4/3), and weak reaction to HCL. **UBFU**
195	1285	SC	195	**CLAYEY SAND with GRAVEL (195-200 feet)** Primarily fine to coarse sand with ~30% fines and ~15% gravel up to 13mm. Sand is subrounded to angular and gravel is subrounded to subangular. Fines have medium plasticity, medium toughness, high dry strength, are brown (7.5YR 5/4), and a strong reaction to HCL. **UBFU**
200	1280	SW	200	**WELL GRADED SAND with GRAVEL (200-205 feet)** Primarily coarse to fine sand with ~5% fines and ~20% gravel up to 9mm. Sand is subrounded to angular and gravel is subrounded to subangular. Fines are nonplastic, no toughness, no dry strength, are brown (7.5YR 4/3), and weak reaction to HCL. **UBFU**
205	1275	SC	205	**CLAYEY SAND with GRAVEL (205-255 feet)** Primarily coarse to fine sand with ~35% fines and ~15% gravel up to 12mm. Sand is subrounded to angular and gravel is subrounded to subangular. Fines have medium plasticity, medium toughness, high dry strength, are brown (7.5YR 5/4), and strong reaction to HCL. **UBFU**
225	1255	CH	225	**SANDY FAT CLAY (225-230 feet)** Primarily fines with ~40% sands and trace gravel up to 5mm. Sand is subrounded to angular and gravel is subrounded. Fines have a medium plasticity, medium toughness, high dry strength, are brown (7.5YR 5/4), and strong reaction to HCL. **UBFU**
230	1250	SC	230	**CLAYEY SAND with GRAVEL (230-240 feet)** Primarily coarse to fine sand with ~35% fines and ~15% gravel up to 14mm. Sand is subrounded to angular and gravel is subrounded to subangular. Fines have medium plasticity, medium toughness, high dry strength, are brown (7.5YR 5/4), and a strong reaction to HCL. **UBFU**
240	1240	SP	240	**POORLY GRADED SAND with GRAVEL (240-282 feet)** Primarily coarse sand with ~5% fines and ~25% gravel up to 16mm. Sand is subrounded to angular and gravel is subrounded to subangular. Fines are nonplastic, no toughness, no dry strength, are brown (7.5YR 4/3), and moderate reaction to HCL. **UBFU**

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION	
250	1225				**ACD Sensor Depths:** 274, 277 feet
255					
260	1220				
265	1215				
270	1210				
275	1205				
280	1200				
285	1195	CH	282	**FAT CLAY with SAND (282-302 feet)** Primarily fines with ~15% sands and trace gravel up to 5mm. Sand is subrounded to angular and gravel is subrounded. Fines have high plasticity, medium toughness, high dry strength, are brown (7.5YR 5/4), and strong reaction to HCL. **MGFU**	
290	1190				
295	1185				
300	1180				
305	1175	SP	302	**POORLY GRADED SAND with GRAVEL (302-377 feet)** Primarily coarse to fine sand with ~5% fines and ~20% gravel. Sand is subangular to angular and gravel is subrounded to subangular. Fines have low plasticity, low toughness, no dry strength, are reddish brown (5YR 5/3), and strong reaction to HCL. **LBFU**	
310	1170				
315	1165				
320	1160				
325	1155				
330	1150				
335	1145				

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
340	1140			
345	1135			
350	1130			
355	1125			
360	1120			
365	1115			
370	1110			
375	1105			
			377	
380	1100			**QUARTZ MONZONITE (377-470 feet)** Consists of quartz at approximately 35%, potassium feldspars at approximately 35%, plagioclase at approximately 25%, and biotite at approximately 5%.
385	1095			
390	1090			
395	1085			
400	1080			
405	1075			
410	1070			
415	1065			
420	1060			
			422	

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
425	1055			**QUARTZ MONZONITE (377-470 feet)** Continued
430	1050			
435	1045			
440	1040			
445	1035			
450	1030			
455	1025			
460	1020			
465	1015			
470	1010		470	**GRANODIORITE (470-510 feet)** Contains mostly plagioclase in a gray aphanitic matrix with biotite crystals composing approximately 10%
475	1005			
480	1000			
485	995			
490	990			
495	985			
500	980			
505	975			
	970			

Filter Pack: No. 8 Silica Sand; 498 - 589, 663 - 727, 827 - 858, 968 - 1005, 1104 - 1203 feet
Fine Sand: No. 30 Silica Sand; 589-663, 727-827, 858-968, 1005-1104 feet

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION	
510	965		510	**QUARTZ MONZONITE (510-685 feet)** Consists of quartz at approximately 35%, potassium feldspars at approximately 35%, plagioclase at approximately 25%, and biotite at approximately 5%.	**Thread Adapter:** Stainless Steel SCH 80; 500 feet
515	960				
520	955				
525	950				
530	945				
535	940				
540	935				
545	930				
550	925				
555	920				
560	915				
565	910				
570	905				
575	900				
580	895				
585	890				
590	885				
595					

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
			596	**QUARTZ MONZONITE (510-685 feet)** Continued
600	880			
605	875			
610	870			
615	865			
620	860			
625	855			
630	850			
635	845			
640	840			
645	835			
650	830			
655	825			
660	820			
665	815			
670	810			
675	805			
680	800			

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
685	795		685	**DIABASE (685-710 feet)** Dark gray to black igneous rock.
690	790			
695	785			
700	780			
705	775			
710	770		710	**QUARTZ MONZONITE (710-760 feet)** Consists of quartz at approximately 35%, potassium feldspars at approximately 35%, plagioclase at approximately 25%, and biotite at approximately 5%.
715	765			
720	760			
725	755			
730	750			
735	745			
740	740			
745	735			
750	730			
755	725			
760	720		760	**DIABASE (760-790 feet)** Dark gray to black igneous rock.
765	715			
	710			

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
770	705			
775	700			
780	695			
785	690			
790	685		790	**QUARTZ MONZONITE (790-1080 feet)** Consists of quartz at approximately 35%, potassium feldspars at approximately 35%, plagioclase at approximately 25%, and biotite at approximately 5%.
795	680			
800	675			
805	670			
810	665			
815	660			
820	655			
825	650			
830	645			
835	640			
840	635			
845	630			
850	625			
855			856	

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
860	620			**QUARTZ MONZONITE (790-1080 feet)** Continued
865	615			
870	610			
875	605			
880	600			
885	595			
890	590			
895	585			
900	580			
905	575			
910	570			
915	565			
920	560			
925	555			
930	550			
935	545			
940	540			
			943	

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
945	535			**QUARTZ MONZONITE (790-1080 feet)** Continued
950	530			
955	525			
960	520			
965	515			
970	510			
975	505			
980	500			
985	495			
990	490			
995	485			
1000	480			
1005	475			
1010	470			
1015	465			
1020	460			
1025	455			
	450			

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
1030	445		1030	
1035	440			
1040	435			
1045	430			
1050	425			
1055	420			
1060	415			
1065	410			
1070	405			
1075	400			
1080	395			**DIABASE (1080-1085 feet)** Dark gray to black igneous rock.
1085	390		1085	**QUARTZ MONZONITE (1085-1170 feet)** Consists of quartz at approximately 35%, potassium feldspars at approximately 35%, plagioclase at approximately 25%, and biotite at approximately 5%.
1090	385			
1095	380			
1100	375			
1105	370			
1110	365			
1115			1116	

Depth (ft)	Elevation	USCS Symbol	Stratum Change Depth (ft)	VISUAL-MANUAL IDENTIFICATION AND DESCRIPTION
1120	360			**QUARTZ MONZONITE (1085-1170 feet)** Continued
1125	355			
1130	350			
1135	345			
1140	340			
1145	335			
1150	330			
1155	325			
1160	320			
1165	315			
1170	310		1170	**GRANODIORITE (1170-1203 feet)** Contains mostly plagioclase in a gray aphanitic matrix with biotite crystals composing approximately 10%
1175	305			
1180	300			
1185	295			
1190	290			
1195	285			
1200	280		1203	

Total Borehole Depth: Driller = 1203 feet; Geophysical Logging = 1174 feet

APPENDIX C

Chemical Characteristics of Formation Water

May 23, 2018

Barbara Sylvester
Brown & Caldwell
201 E. Washington Suite 500
Phoenix, AZ 85004

TEL (602) 567-3894
FAX -

Work Order No.: 18D0619
Order Name: Florence Copper

RE: PTF

Dear Barbara Sylvester,

Turner Laboratories, Inc. received 2 sample(s) on 04/25/2018 for the analyses presented in the following report.

All results are intended to be considered in their entirety, and Turner Laboratories, Inc. is not responsible for use of less than the complete report. Results apply only to the samples analyzed. Samples will be disposed of 30 days after issue of our report unless special arrangements are made.

The pages that follow may contain sensitive, privileged or confidential information intended solely for the addressee named above. If you receive this message and are not the agent or employee of the addressee, this communication has been sent in error. Please do not disseminate or copy any of the attached and notify the sender immediately by telephone. Please also return the attached sheet(s) to the sender by mail.

Please call if you have any questions.

Respectfully submitted,

Turner Laboratories, Inc.
ADHS License AZ0066

Kevin Brim
Project Manager

Client: Brown & Caldwell
Project: PTF
Work Order: 18D0619
Date Received: 04/25/2018

Order: Florence Copper

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Matrix	Collection Date/Time
18D0619-01	R-09	Ground Water	04/23/2018 1555
18D0619-02	TB	Ground Water	04/25/2018 0000

Client: Brown & Caldwell
Project: PTF
Work Order: 18D0619
Date Received: 04/25/2018

Case Narrative

The 8015D analysis was performed by TestAmerica Laboratories, Inc. in Phoenix, AZ.

The radiochemistry analysis was performed by Radiation Safety Engineering, Inc. in Chandler, AZ.

D5	Minimum Reporting Limit (MRL) is adjusted due to sample dilution; analyte was non-detect in the sample.
H5	This test is specified to be performed in the field within 15 minutes of sampling; sample was received and analyzed past the regulatory holding time.
M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The associated LCS/LCSD recovery was acceptable.

All soil, sludge, and solid matrix determinations are reported on a wet weight basis unless otherwise noted.

ND	Not Detected at or above the PQL
PQL	Practical Quantitation Limit
DF	Dilution Factor
PRL	Project Reporting Limit

Turner Laboratories, Inc.

Date: 05/23/2018

Client: Brown & Caldwell
Project: PTF
Work Order: 18D0619
Lab Sample ID: 18D0619-01

Client Sample ID: R-09
Collection Date/Time: 04/23/2018 1555
Matrix: Ground Water
Order Name: Florence Copper

Analyses	Result	PRL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
ICP Dissolved Metals-E 200.7 (4.4)									
Calcium	140		4.0	M3	mg/L	1	04/27/2018 1440	05/04/2018 1150	MH
Iron	ND		0.30		mg/L	1	04/27/2018 1440	05/04/2018 1150	MH
Magnesium	27		3.0		mg/L	1	04/27/2018 1440	05/04/2018 1150	MH
Potassium	6.8		5.0		mg/L	1	04/27/2018 1440	05/04/2018 1150	MH
Sodium	170		5.0	M3	mg/L	1	04/27/2018 1440	05/04/2018 1150	MH
ICP/MS Dissolved Metals-E 200.8 (5.4)									
Aluminum	ND		0.0800	D5	mg/L	2	04/27/2018 1440	05/07/2018 1139	MH
Antimony	ND		0.00050		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Arsenic	0.0016		0.00050		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Barium	0.071		0.00050		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Beryllium	ND		0.00050	D5	mg/L	2	04/27/2018 1440	05/07/2018 1139	MH
Cadmium	ND		0.00025		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Chromium	0.0051		0.00050		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Cobalt	ND		0.00025		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Copper	0.011		0.00050		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Lead	ND		0.00050		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Manganese	0.0020		0.00025		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Nickel	0.0033		0.00050		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Selenium	ND		0.0025		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Thallium	ND		0.00050		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
Zinc	ND		0.040		mg/L	1	04/27/2018 1440	05/07/2018 1133	MH
CVAA Dissolved Mercury-E 245.1									
Mercury	ND		0.0010		mg/L	1	04/26/2018 0955	04/26/2018 1639	MH
pH-E150.1									
pH (pH Units)	7.8			H5	-	1	04/26/2018 1615	04/26/2018 1616	AP
Temperature (°C)	22			H5	-	1	04/26/2018 1615	04/26/2018 1616	AP
ICP/MS Total Metals-E200.8 (5.4)									
Uranium	0.016		0.00050		mg/L	1	04/27/2018 1230	04/30/2018 1348	MH

Client: Brown & Caldwell
Project: PTF
Work Order: 18D0619
Lab Sample ID: 18D0619-01

Client Sample ID: R-09
Collection Date/Time: 04/23/2018 1555
Matrix: Ground Water
Order Name: Florence Copper

Analyses	Result	PRL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Anions by Ion Chromatography-E300.0 (2.1)									
Chloride	310		25		mg/L	25	04/26/2018 1225	04/26/2018 1415	AP
Fluoride	ND		0.50		mg/L	1	04/25/2018 1208	04/25/2018 1544	AP
Nitrogen, Nitrate (As N)	8.8		0.50		mg/L	1	04/25/2018 1208	04/25/2018 1544	AP
Nitrogen, Nitrite (As N)	ND		0.10		mg/L	1	04/25/2018 1208	04/25/2018 1544	AP
Sulfate	190		130		mg/L	25	04/26/2018 1225	04/26/2018 1415	AP
Cyanide-E335.4									
Cyanide	ND		0.10		mg/L	1	04/26/2018 0845	04/30/2018 1545	AP
Alkalinity-SM2320B									
Alkalinity, Bicarbonate (As CaCO3)	150		2.0		mg/L	1	05/03/2018 1030	05/03/2018 1210	EJ
Alkalinity, Carbonate (As CaCO3)	ND		2.0		mg/L	1	05/03/2018 1030	05/03/2018 1210	EJ
Alkalinity, Hydroxide (As CaCO3)	ND		2.0		mg/L	1	05/03/2018 1030	05/03/2018 1210	EJ
Alkalinity, Phenolphthalein (As CaCO3)	ND		2.0		mg/L	1	05/03/2018 1030	05/03/2018 1210	EJ
Alkalinity, Total (As CaCO3)	150		2.0		mg/L	1	05/03/2018 1030	05/03/2018 1210	EJ
Specific Conductance-SM2510 B									
Conductivity	1700		0.20		µmhos/cm	2	05/09/2018 1315	05/09/2018 1330	AP
Total Dissolved Solids (Residue, Filterable)-SM2540 C									
Total Dissolved Solids (Residue, Filterable)	1000		20		mg/L	1	04/26/2018 0826	05/01/2018 1600	EJ
Volatile Organic Compounds by GC/MS-SW8260B									
Benzene	ND		0.50		ug/L	1	05/07/2018 1824	05/07/2018 1943	KP
Carbon disulfide	ND		2.0		ug/L	1	05/07/2018 1824	05/07/2018 1943	KP
Ethylbenzene	ND		0.50		ug/L	1	05/07/2018 1824	05/07/2018 1943	KP
Toluene	ND		0.50		ug/L	1	05/07/2018 1824	05/07/2018 1943	KP
Xylenes, Total	ND		1.5		ug/L	1	05/07/2018 1824	05/07/2018 1943	KP
Surr: 4-Bromofluorobenzene	*95*	*70-130*			*%REC*	*1*	*05/07/2018 1824*	*05/07/2018 1943*	*KP*
Surr: Dibromofluoromethane	*101*	*70-130*			*%REC*	*1*	*05/07/2018 1824*	*05/07/2018 1943*	*KP*
Surr: Toluene-d8	*77*	*70-130*			*%REC*	*1*	*05/07/2018 1824*	*05/07/2018 1943*	*KP*

Client: Brown & Caldwell
Project: PTF
Work Order: 18D0619
Lab Sample ID: 18D0619-02

Client Sample ID: TB
Collection Date/Time: 04/25/2018 0000
Matrix: Ground Water
Order Name: Florence Copper

Analyses	Result	PRL	PQL	Qual	Units	DF	Prep Date	Analysis Date	Analyst
Volatile Organic Compounds by GC/MS-SW8260B									
Benzene	ND		0.50		ug/L	1	05/07/2018 1824	05/07/2018 2344	KP
Carbon disulfide	ND		2.0		ug/L	1	05/07/2018 1824	05/07/2018 2344	KP
Ethylbenzene	ND		0.50		ug/L	1	05/07/2018 1824	05/07/2018 2344	KP
Toluene	ND		0.50		ug/L	1	05/07/2018 1824	05/07/2018 2344	KP
Xylenes, Total	ND		1.5		ug/L	1	05/07/2018 1824	05/07/2018 2344	KP
Surr: 4-Bromofluorobenzene	*101*	*70-130*			*%REC*	*1*	*05/07/2018 1824*	*05/07/2018 2344*	*KP*
Surr: Dibromofluoromethane	*110*	*70-130*			*%REC*	*1*	*05/07/2018 1824*	*05/07/2018 2344*	*KP*
Surr: Toluene-d8	*103*	*70-130*			*%REC*	*1*	*05/07/2018 1824*	*05/07/2018 2344*	*KP*

Client: Brown & Caldwell
Project: PTF
Work Order: 18D0619
Date Received: 04/25/2018

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1804269 - E 245.1										
Blank (1804269-BLK1)				Prepared & Analyzed: 04/26/2018						
Mercury	ND	0.0010	mg/L							
LCS (1804269-BS1)				Prepared & Analyzed: 04/26/2018						
Mercury	0.0049	0.0010	mg/L	0.005000		98	85-115			
LCS Dup (1804269-BSD1)				Prepared & Analyzed: 04/26/2018						
Mercury	0.0048	0.0010	mg/L	0.005000		95	85-115	2	20	
Matrix Spike (1804269-MS1)		**Source: 18D0394-01**		Prepared & Analyzed: 04/26/2018						
Mercury	0.0050	0.0010	mg/L	0.005000	0.00020	97	85-115			
Matrix Spike Dup (1804269-MSD1)		**Source: 18D0394-01**		Prepared & Analyzed: 04/26/2018						
Mercury	0.0050	0.0010	mg/L	0.005000	0.00020	96	85-115	1	20	
Batch 1804292 - E200.8 (5.4)										
Blank (1804292-BLK1)				Prepared & Analyzed: 04/30/2018						
Uranium	ND	0.00050	mg/L							
LCS (1804292-BS1)				Prepared & Analyzed: 04/30/2018						
Uranium	0.046	0.00050	mg/L	0.05000		92	85-115			
LCS Dup (1804292-BSD1)				Prepared & Analyzed: 04/30/2018						
Uranium	0.046	0.00050	mg/L	0.05000		92	85-115	0.2	20	
Matrix Spike (1804292-MS1)		**Source: 18D0614-01**		Prepared & Analyzed: 04/30/2018						
Uranium	0.051	0.00050	mg/L	0.05000	0.0015	99	70-130			
Batch 1805051 - E 200.7 (4.4)										
Blank (1805051-BLK1)				Prepared & Analyzed: 05/04/2018						
Calcium	ND	4.0	mg/L							
Iron	ND	0.30	mg/L							
Magnesium	ND	3.0	mg/L							
Potassium	ND	5.0	mg/L							
Sodium	ND	5.0	mg/L							
LCS (1805051-BS1)				Prepared & Analyzed: 05/04/2018						
Calcium	11	4.0	mg/L	10.00		109	85-115			
Iron	1.0	0.30	mg/L	1.000		104	85-115			
Magnesium	10	3.0	mg/L	10.00		105	85-115			
Potassium	10	5.0	mg/L	10.00		105	85-115			
Sodium	10	5.0	mg/L	10.00		105	85-115			
LCS Dup (1805051-BSD1)				Prepared & Analyzed: 05/04/2018						
Calcium	11	4.0	mg/L	10.00		110	85-115	1	20	
Iron	1.0	0.30	mg/L	1.000		105	85-115	0.5	20	
Magnesium	10	3.0	mg/L	10.00		105	85-115	0.06	20	
Potassium	10	5.0	mg/L	10.00		105	85-115	0.05	20	
Sodium	11	5.0	mg/L	10.00		109	85-115	4	20	

Client: Brown & Caldwell
Project: PTF
Work Order: 18D0619
Date Received: 04/25/2018

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1805051 - E 200.7 (4.4)										
Matrix Spike (1805051-MS1)	**Source: 18D0619-01**			Prepared & Analyzed: 05/04/2018						
Calcium	150	4.0	mg/L	10.00	140	59	70-130			M3
Iron	1.1	0.30	mg/L	1.000	0.028	105	70-130			
Magnesium	38	3.0	mg/L	10.00	27	108	70-130			
Potassium	17	5.0	mg/L	10.00	6.8	105	70-130			
Sodium	170	5.0	mg/L	10.00	170	30	70-130			M3
Matrix Spike (1805051-MS2)	**Source: 18E0021-01**			Prepared & Analyzed: 05/04/2018						
Calcium	64	4.0	mg/L	10.00	54	103	70-130			
Iron	1.0	0.30	mg/L	1.000	0.0060	101	70-130			
Magnesium	21	3.0	mg/L	10.00	11	99	70-130			
Potassium	15	5.0	mg/L	10.00	4.7	104	70-130			
Sodium	99	5.0	mg/L	10.00	90	87	70-130			
Batch 1805069 - E 200.8 (5.4)										
Blank (1805069-BLK1)				Prepared & Analyzed: 05/07/2018						
Aluminum	ND	0.0400	mg/L							
Antimony	ND	0.00050	mg/L							
Arsenic	ND	0.00050	mg/L							
Barium	ND	0.00050	mg/L							
Beryllium	ND	0.00025	mg/L							
Cadmium	ND	0.00025	mg/L							
Chromium	ND	0.00050	mg/L							
Cobalt	ND	0.00025	mg/L							
Copper	ND	0.00050	mg/L							
Lead	ND	0.00050	mg/L							
Manganese	ND	0.00025	mg/L							
Nickel	ND	0.00050	mg/L							
Selenium	ND	0.0025	mg/L							
Thallium	ND	0.00050	mg/L							
Zinc	ND	0.040	mg/L							
LCS (1805069-BS1)				Prepared & Analyzed: 05/07/2018						
Aluminum	0.104	0.0400	mg/L	0.1000		104	85-115			
Antimony	0.048	0.00050	mg/L	0.05000		96	85-115			
Arsenic	0.050	0.00050	mg/L	0.05000		100	85-115			
Barium	0.050	0.00050	mg/L	0.05000		100	85-115			
Beryllium	0.049	0.00025	mg/L	0.05000		97	85-115			
Cadmium	0.050	0.00025	mg/L	0.05000		100	85-115			
Chromium	0.051	0.00050	mg/L	0.05000		102	85-115			
Cobalt	0.051	0.00025	mg/L	0.05000		101	85-115			
Copper	0.051	0.00050	mg/L	0.05000		103	85-115			
Lead	0.049	0.00050	mg/L	0.05000		98	85-115			
Manganese	0.050	0.00025	mg/L	0.05000		101	85-115			
Nickel	0.051	0.00050	mg/L	0.05000		102	85-115			
Selenium	0.051	0.0025	mg/L	0.05000		103	85-115			
Thallium	0.050	0.00050	mg/L	0.05000		101	85-115			
Zinc	0.10	0.040	mg/L	0.1000		101	85-115			

Client: Brown & Caldwell
Project: PTF
Work Order: 18D0619
Date Received: 04/25/2018

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1805069 - E 200.8 (5.4)										
LCS Dup (1805069-BSD1)				Prepared & Analyzed: 05/07/2018						
Aluminum	0.115	0.0400	mg/L	0.1000		115	85-115	10	20	
Antimony	0.048	0.00050	mg/L	0.05000		96	85-115	0.7	20	
Arsenic	0.050	0.00050	mg/L	0.05000		101	85-115	0.8	20	
Barium	0.051	0.00050	mg/L	0.05000		102	85-115	1	20	
Beryllium	0.049	0.00025	mg/L	0.05000		97	85-115	0.2	20	
Cadmium	0.050	0.00025	mg/L	0.05000		100	85-115	0.2	20	
Chromium	0.051	0.00050	mg/L	0.05000		102	85-115	0.4	20	
Cobalt	0.050	0.00025	mg/L	0.05000		101	85-115	0.5	20	
Copper	0.052	0.00050	mg/L	0.05000		105	85-115	2	20	
Lead	0.049	0.00050	mg/L	0.05000		98	85-115	0.1	20	
Manganese	0.050	0.00025	mg/L	0.05000		101	85-115	0.09	20	
Nickel	0.051	0.00050	mg/L	0.05000		103	85-115	0.8	20	
Selenium	0.052	0.0025	mg/L	0.05000		104	85-115	2	20	
Thallium	0.050	0.00050	mg/L	0.05000		101	85-115	0.06	20	
Zinc	0.10	0.040	mg/L	0.1000		104	85-115	3	20	
Matrix Spike (1805069-MS1)		**Source: 18D0693-01**		Prepared & Analyzed: 05/07/2018						
Aluminum	0.239	0.0400	mg/L	0.1000	0.166	74	70-130			
Antimony	0.045	0.00050	mg/L	0.05000	0.00024	90	70-130			
Arsenic	0.056	0.00050	mg/L	0.05000	0.0035	104	70-130			
Barium	0.16	0.00050	mg/L	0.05000	0.12	94	70-130			
Beryllium	0.045	0.00025	mg/L	0.05000	0.000029	90	70-130			
Cadmium	0.047	0.00025	mg/L	0.05000	ND	94	70-130			
Chromium	0.049	0.00050	mg/L	0.05000	0.00052	98	70-130			
Cobalt	0.048	0.00025	mg/L	0.05000	0.00097	95	70-130			
Copper	0.051	0.00050	mg/L	0.05000	0.0020	98	70-130			
Lead	0.047	0.00050	mg/L	0.05000	0.00016	94	70-130			
Manganese	0.054	0.00025	mg/L	0.05000	0.0075	94	70-130			
Nickel	0.049	0.00050	mg/L	0.05000	0.0018	94	70-130			
Selenium	0.057	0.0025	mg/L	0.05000	ND	114	70-130			
Thallium	0.048	0.00050	mg/L	0.05000	0.000038	96	70-130			
Zinc	0.11	0.040	mg/L	0.1000	ND	109	70-130			

Client: Brown & Caldwell
Project: PTF
Work Order: 18D0619
Date Received: 04/25/2018

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1804261 - SM2540 C										
Duplicate (1804261-DUP1)		**Source: 18D0606-01**		Prepared: 04/26/2018 Analyzed: 04/27/2018						
Total Dissolved Solids (Residue, Filterable)	630	20	mg/L		630			0.3	5	
Duplicate (1804261-DUP2)		**Source: 18D0606-02**		Prepared: 04/26/2018 Analyzed: 04/27/2018						
Total Dissolved Solids (Residue, Filterable)	610	20	mg/L		620			0.8	5	
Batch 1804268 - E335.4										
Blank (1804268-BLK1)				Prepared: 04/26/2018 Analyzed: 04/30/2018						
Cyanide	ND	0.10	mg/L							
LCS (1804268-BS1)				Prepared: 04/26/2018 Analyzed: 04/30/2018						
Cyanide	2.0	0.10	mg/L	2.000		101	90-110			
LCS Dup (1804268-BSD1)				Prepared: 04/26/2018 Analyzed: 04/30/2018						
Cyanide	2.0	0.10	mg/L	2.000		101	90-110	0.1	20	
Matrix Spike (1804268-MS1)		**Source: 18D0602-03**		Prepared: 04/26/2018 Analyzed: 04/30/2018						
Cyanide	2.1	0.10	mg/L	2.000	ND	103	90-110			
Matrix Spike Dup (1804268-MSD1)		**Source: 18D0602-03**		Prepared: 04/26/2018 Analyzed: 04/30/2018						
Cyanide	2.0	0.10	mg/L	2.000	ND	98	90-110	5	20	
Batch 1804272 - E150.1										
Duplicate (1804272-DUP1)		**Source: 18D0662-02**		Prepared & Analyzed: 04/26/2018						
pH (pH Units)	7.8		-		7.8			0.1	200	H5
Temperature (°C)	21		-		21			2	200	H5
Batch 1805027 - SM2320B										
LCS (1805027-BS1)				Prepared & Analyzed: 05/03/2018						
Alkalinity, Total (As CaCO3)	240	2.0	mg/L	250.0		96	90-110			
LCS Dup (1805027-BSD1)				Prepared & Analyzed: 05/03/2018						
Alkalinity, Total (As CaCO3)	240	2.0	mg/L	250.0		96	90-110	0	10	
Matrix Spike (1805027-MS1)		**Source: 18D0606-02**		Prepared & Analyzed: 05/03/2018						
Alkalinity, Total (As CaCO3)	370	2.0	mg/L	250.0	130	96	85-115			
Matrix Spike Dup (1805027-MSD1)		**Source: 18D0606-02**		Prepared & Analyzed: 05/03/2018						
Alkalinity, Total (As CaCO3)	370	2.0	mg/L	250.0	130	95	85-115	0.5	10	
Batch 1805103 - SM2510 B										
LCS (1805103-BS1)				Prepared & Analyzed: 05/09/2018						
Conductivity	140	0.10	µmhos/cm	141.2		101	0-200			
LCS Dup (1805103-BSD1)				Prepared & Analyzed: 05/09/2018						
Conductivity	140	0.10	µmhos/cm	141.2		101	0-200	0.7	200	
Duplicate (1805103-DUP1)		**Source: 18E0192-01**		Prepared & Analyzed: 05/09/2018						
Conductivity	4.0	0.10	µmhos/cm		4.0			0	10	

Client: Brown & Caldwell
Project: PTF
Work Order: 18D0619
Date Received: 04/25/2018

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1805074 - SW8260B										
Blank (1805074-BLK1)				Prepared & Analyzed: 05/07/2018						
Benzene	ND	0.50	ug/L							
Carbon disulfide	ND	2.0	ug/L							
Ethylbenzene	ND	0.50	ug/L							
Toluene	ND	0.50	ug/L							
Xylenes, Total	ND	1.5	ug/L							
Surrogate: 4-Bromofluorobenzene	*25.0*		*ug/L*	*25.00*		*100*	*70-130*			
Surrogate: Dibromofluoromethane	*26.9*		*ug/L*	*25.00*		*107*	*70-130*			
Surrogate: Toluene-d8	*25.1*		*ug/L*	*25.00*		*100*	*70-130*			
LCS (1805074-BS1)				Prepared & Analyzed: 05/07/2018						
1,1-Dichloroethene	29		ug/L	25.00		114	70-130			
Benzene	27		ug/L	25.00		109	70-130			
Chlorobenzene	29		ug/L	25.00		115	70-130			
Toluene	25		ug/L	25.00		101	70-130			
Trichloroethene	26		ug/L	25.00		103	70-130			
Surrogate: 4-Bromofluorobenzene	*24.6*		*ug/L*	*25.00*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*25.6*		*ug/L*	*25.00*		*102*	*70-130*			
Surrogate: Toluene-d8	*24.8*		*ug/L*	*25.00*		*99*	*70-130*			
LCS Dup (1805074-BSD1)				Prepared & Analyzed: 05/07/2018						
1,1-Dichloroethene	27		ug/L	25.00		110	70-130	4	30	
Benzene	26		ug/L	25.00		104	70-130	5	30	
Chlorobenzene	26		ug/L	25.00		105	70-130	9	30	
Toluene	24		ug/L	25.00		96	70-130	5	30	
Trichloroethene	25		ug/L	25.00		98	70-130	4	30	
Surrogate: 4-Bromofluorobenzene	*24.4*		*ug/L*	*25.00*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*26.1*		*ug/L*	*25.00*		*104*	*70-130*			
Surrogate: Toluene-d8	*25.1*		*ug/L*	*25.00*		*100*	*70-130*			
Matrix Spike (1805074-MS1)	**Source: 18D0582-02**			Prepared & Analyzed: 05/07/2018						
1,1-Dichloroethene	27		ug/L	25.00	0.070	109	70-130			
Benzene	26		ug/L	25.00	0.020	104	70-130			
Chlorobenzene	26		ug/L	25.00	0.0	105	70-130			
Toluene	27		ug/L	25.00	3.5	95	70-130			
Trichloroethene	24		ug/L	25.00	0.040	97	70-130			
Surrogate: 4-Bromofluorobenzene	*24.4*		*ug/L*	*25.00*		*98*	*70-130*			
Surrogate: Dibromofluoromethane	*26.4*		*ug/L*	*25.00*		*106*	*70-130*			
Surrogate: Toluene-d8	*24.9*		*ug/L*	*25.00*		*100*	*70-130*			
Matrix Spike Dup (1805074-MSD1)	**Source: 18D0582-02**			Prepared & Analyzed: 05/07/2018						
1,1-Dichloroethene	27		ug/L	25.00	0.070	108	70-130	0.8	30	
Benzene	25		ug/L	25.00	0.020	101	70-130	2	30	
Chlorobenzene	26		ug/L	25.00	0.0	105	70-130	0.3	30	
Toluene	27		ug/L	25.00	3.5	95	70-130	0.1	30	
Trichloroethene	24		ug/L	25.00	0.040	95	70-130	2	30	
Surrogate: 4-Bromofluorobenzene	*24.7*		*ug/L*	*25.00*		*99*	*70-130*			
Surrogate: Dibromofluoromethane	*26.4*		*ug/L*	*25.00*		*106*	*70-130*			
Surrogate: Toluene-d8	*25.3*		*ug/L*	*25.00*		*101*	*70-130*			

Client: Brown & Caldwell
Project: PTF
Work Order: 18D0619
Date Received: 04/25/2018

QC Summary

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Qual
Batch 1804245 - E300.0 (2.1)										
Blank (1804245-BLK1)				Prepared & Analyzed: 04/25/2018						
Chloride	ND	1.0	mg/L							
Fluoride	ND	0.50	mg/L							
Nitrogen, Nitrate (As N)	ND	0.50	mg/L							
Nitrogen, Nitrite (As N)	ND	0.10	mg/L							
Sulfate	ND	5.0	mg/L							
LCS (1804245-BS1)				Prepared & Analyzed: 04/25/2018						
Chloride	12	1.0	mg/L	12.50		92	90-110			
Fluoride	2.0	0.50	mg/L	2.000		101	90-110			
Nitrogen, Nitrate (As N)	4.7	0.50	mg/L	5.000		95	90-110			
Nitrogen, Nitrite (As N)	2.3	0.10	mg/L	2.500		92	90-110			
Sulfate	12	5.0	mg/L	12.50		96	90-110			
LCS Dup (1804245-BSD1)				Prepared & Analyzed: 04/25/2018						
Chloride	12	1.0	mg/L	12.50		94	90-110	2	10	
Fluoride	2.0	0.50	mg/L	2.000		101	90-110	0.4	10	
Nitrogen, Nitrate (As N)	4.9	0.50	mg/L	5.000		98	90-110	3	10	
Nitrogen, Nitrite (As N)	2.4	0.10	mg/L	2.500		95	90-110	3	10	
Sulfate	12	5.0	mg/L	12.50		98	90-110	3	10	
Matrix Spike (1804245-MS1)		**Source: 18D0613-08**		Prepared & Analyzed: 04/25/2018						
Fluoride	3.7	0.50	mg/L	2.000	1.7	100	80-120			
Nitrogen, Nitrate (As N)	4.7	0.50	mg/L	5.000	0.22	89	80-120			
Matrix Spike (1804245-MS2)		**Source: 18D0625-01**		Prepared & Analyzed: 04/26/2018						
Nitrogen, Nitrate (As N)	5.0	0.50	mg/L	5.000	0.46	92	80-120			
Nitrogen, Nitrite (As N)	2.2	0.10	mg/L	2.500	ND	88	80-120			
Matrix Spike (1804245-MS3)		**Source: 18D0614-01RE1**		Prepared & Analyzed: 04/26/2018						
Chloride	17		mg/L	12.50	6.4	88	80-120			
Sulfate	28		mg/L	12.50	18	85	80-120			
Matrix Spike Dup (1804245-MSD1)		**Source: 18D0613-08**		Prepared & Analyzed: 04/25/2018						
Fluoride	3.7	0.50	mg/L	2.000	1.7	100	80-120	0.4	10	
Nitrogen, Nitrate (As N)	4.7	0.50	mg/L	5.000	0.22	90	80-120	0.6	10	
Matrix Spike Dup (1804245-MSD2)		**Source: 18D0625-01**		Prepared & Analyzed: 04/26/2018						
Nitrogen, Nitrate (As N)	5.1	0.50	mg/L	5.000	0.46	92	80-120	0.2	10	
Nitrogen, Nitrite (As N)	2.2	0.10	mg/L	2.500	ND	88	80-120	0.4	10	
Matrix Spike Dup (1804245-MSD3)		**Source: 18D0614-01RE1**		Prepared & Analyzed: 04/26/2018						
Chloride	18		mg/L	12.50	6.4	89	80-120	0.6	10	
Sulfate	29		mg/L	12.50	18	86	80-120	0.6	10	

TURNER LABORATORIES INC.

2445 N. Coyote Drive, Suite 104
Tucson, Arizona 85745
(520) 882-5880
Fax: (520) 882-9788
www.turnerlabs.com

CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

TURNER WORK ORDER # 18D0619 DATE 4/23/18 PAGE 1 OF 1

PROJECT NAME Florence Copper #

CONTACT NAME: Barb Sylvester

COMPANY NAME: Brown and Caldwell

ADDRESS: 2 N Central Ave, Suite 1600

CITY Phoenix STATE AZ ZIP CODE 85004

PHONE 602-567-3894 FAX

SAMPLER'S SIGNATURE [signature]

CIRCLE ANALYSIS REQUESTED AND/OR CHECK THE APPROPRIATE BOX

SAMPLE I.D.	DATE	TIME	LAB I.D.	SAMPLE MATRIX*	NUMBER OF CONTAINERS	Diss Metals - list (Field Filtered)	Total Uranium (not Filtered)	Inorganics - list	Cyanide (free)	Organics - list	G.Alpha, (RadSafety sub)	Uranium activity if G. Alpha >12	Ra226, 228, Ra-Tot (RadsSafety)	TPH-D (TestAmerica Sub)
R-09	4-23-18	1555		GW	10	X	X	X	X	X	X	X	X	X
8260 TB	4-23-18	1606		GW	1					X				
				GW										
				GW										
				GW										
				GW										
				GW										
				GW										
				GW										
				GW										
				GW										

1. RELINQUISHED BY:
Signature [signature]
Printed Name [signature]
Firm [illegible]
Date/Time 4-23-18 1630

2. RECEIVED BY:
Signature UPS
Printed Name
Firm
Date/Time

3. RELINQUISHED BY:
Signature UPS
Printed Name
Firm
Date/Time

4. RECEIVED BY:
Signature [signature]
Printed Name Joseph Catalano
Firm TURNER LABORATORIES INC.
Date/Time 4/23/18 1006

TURNAROUND REQUIREMENTS:
X Standard (approx10 days)*
___ Next day ___ 2 Day ___ 5 Day*
___ Email Preliminary Results To:
* Working Days

*LEGEND
DW = DRINKING WATER
GW = GROUNDWATER
SD = SOLID
SG = SLUDGE
SL = SOIL
ST = STORMWATER
WW = WASTEWATER

REPORT REQUIREMENTS:
X I. Routine Report
___ II. Report (includes DUP,MS,MSD, as required, may be charged as samples)
___ III. Date Validation Report (Includes All Raw Data)
Add 10% to invoice

INVOICE INFORMATION:
Account X Y ___ N
P.O. #
Bill to: Florence Copper

SAMPLE RECEIPT:
Total Containers
Temperature 2.2
☑ Wet Ice ☐ Blue Ice

SPECIAL INSTRUCTIONS/COMMENTS:

Compliance Analysis: ☐ Yes ☐ No	Custody Seals ☐	Preservation Confirmation ☒
ADEQ Forms: ☐ Yes ☐ No	Container Intact ☒	Appropriate Head Space ☒
Mail ADEQ Forms: ☐ Yes ☐ No	COC/Labels Agree ☒	Received Within Hold Time ☒

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Phoenix
4625 East Cotton Ctr Blvd
Suite 189
Phoenix, AZ 85040
Tel: (602)437-3340

TestAmerica Job ID: 550-101943-1
Client Project/Site: 18D0619

For:
Turner Laboratories, Inc.
2445 North Coyote Drive
Suite 104
Tucson, Arizona 85745

Attn: Kevin Brim

Authorized for release by:
5/16/2018 12:23:25 PM

Ken Baker, Project Manager II
(602)659-7624
ken.baker@testamericainc.com

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

Table of Contents

Definitions/Glossary

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
Q9	Insufficient sample received to meet method QC requirements.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Case Narrative

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

Job ID: 550-101943-1

Laboratory: TestAmerica Phoenix

Narrative

Job Narrative
550-101943-1

Comments
No additional comments.

Receipt
The sample was received on 4/27/2018 10:50 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.8º C.

GC Semi VOA
Method(s) 8015D: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD) associated with preparation batch 550-145985 and analytical batch 550-146884. Affected samples have been added a Q9 qualifier. 18D0619-01 (550-101943-1)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
Method(s) 3510C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with 3510C.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Sample Summary

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
550-101943-1	18D0619-01	Water	04/23/18 15:55	04/27/18 10:50

Detection Summary

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

Client Sample ID: 18D0619-01

Lab Sample ID: 550-101943-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
ORO (C22-C32)	0.21	Q9	0.20		mg/L	1		8015D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

Client Sample ID: 18D0619-01
Date Collected: 04/23/18 15:55
Date Received: 04/27/18 10:50

Lab Sample ID: 550-101943-1
Matrix: Water

Method: 8015D - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
ORO (C22-C32)	0.21	Q9	0.20		mg/L		04/30/18 14:16	05/10/18 23:29	1
DRO (C10-C22)	ND	Q9	0.10		mg/L		04/30/18 14:16	05/10/18 23:29	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*79*		*10 - 150*	*04/30/18 14:16*	*05/10/18 23:29*	*1*

Surrogate Summary

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

Method: 8015D - Diesel Range Organics (DRO) (GC)

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)							
Lab Sample ID	Client Sample ID	OTPH (10-150)							
550-101943-1	18D0619-01	79							
LCS 550-145985/2-A	Lab Control Sample	79							
LCSD 550-145985/3-A	Lab Control Sample Dup	79							
MB 550-145985/1-A	Method Blank	65							

Surrogate Legend

OTPH = o-Terphenyl (Surr)

Method: 8015D - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 550-145985/1-A
Matrix: Water
Analysis Batch: 146884

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 145985

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
ORO (C22-C32)	ND		0.20		mg/L		04/30/18 14:15	05/11/18 11:16	1
DRO (C10-C22)	ND		0.10		mg/L		04/30/18 14:15	05/11/18 11:16	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl (Surr)	*65*		*10 - 150*	*04/30/18 14:15*	*05/11/18 11:16*	*1*

Lab Sample ID: LCS 550-145985/2-A
Matrix: Water
Analysis Batch: 146884

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 145985

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
ORO (C22-C32)			1.60	1.59		mg/L		99	69 - 107		
DRO (C10-C22)			0.400	0.450		mg/L		113	42 - 133		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
o-Terphenyl (Surr)	*79*		*10 - 150*

Lab Sample ID: LCSD 550-145985/3-A
Matrix: Water
Analysis Batch: 146884

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 145985

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
ORO (C22-C32)			1.60	1.59		mg/L		100	69 - 107	0	20
DRO (C10-C22)			0.400	0.447		mg/L		112	42 - 133	1	22

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl (Surr)	*79*		*10 - 150*

QC Association Summary

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

GC Semi VOA

Prep Batch: 145985

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-101943-1	18D0619-01	Total/NA	Water	3510C	
MB 550-145985/1-A	Method Blank	Total/NA	Water	3510C	
LCS 550-145985/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 550-145985/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 146884

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
550-101943-1	18D0619-01	Total/NA	Water	8015D	145985
MB 550-145985/1-A	Method Blank	Total/NA	Water	8015D	145985
LCS 550-145985/2-A	Lab Control Sample	Total/NA	Water	8015D	145985
LCSD 550-145985/3-A	Lab Control Sample Dup	Total/NA	Water	8015D	145985

Lab Chronicle

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

Client Sample ID: 18D0619-01
Date Collected: 04/23/18 15:55
Date Received: 04/27/18 10:50

Lab Sample ID: 550-101943-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3510C			145985	04/30/18 14:16	REM	TAL PHX
Total/NA	Analysis	8015D		1	146884	05/10/18 23:29	TC1	TAL PHX

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

Accreditation/Certification Summary

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

Laboratory: TestAmerica Phoenix

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ0728	06-09-18

Analysis Method	Prep Method	Matrix	Analyte

Method Summary

Client: Turner Laboratories, Inc.
Project/Site: 18D0619

TestAmerica Job ID: 550-101943-1

Method	Method Description	Protocol	Laboratory
8015D	Diesel Range Organics (DRO) (GC)	SW846	TAL PHX
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	TAL PHX

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PHX = TestAmerica Phoenix, 4625 East Cotton Ctr Blvd, Suite 189, Phoenix, AZ 85040, TEL (602)437-3340

SUBCONTRACT ORDER

Turner Laboratories, Inc.

101943

18D0619

SENDING LABORATORY:	RECEIVING LABORATORY:
Turner Laboratories, Inc.	TestAmerica Phoenix
2445 N. Coyote Drive, Ste #104	4625 East Cotton Center Boulevard Suite 189
Tucson, AZ 85745	Phoenix, AZ 85540
Phone: 520.882.5880	Phone :(602) 437-3340
Fax: 520.882.9788	Fax:
Project Manager: Kevin Brim	Please CC Kevin Brim Kbrim@turnerlabs.com

Analysis	Expires	Laboratory ID	Comments
-01			
Sample ID: 18D0619-01 Drinking Water	**Sampled:04/23/2018 15:55**		
8015D Sub	04/30/2018 15:55		8015D DRO and ORO Paramaters Only
Containers Supplied:			

8015D Sub
o-Terphenyl
C10-C32 (Total)
C22-C32 (Oil Range Organics)
C10-C22 (Diesel Range Organics)
C6-C10 (Gasoline Range Organics)

550-101943 Chain of Custody

3,8°C UPS GR

TA-PHX

Released By	Date	Received By	Date
	4/24/18		4-27-18 1050
Released By	Date	Received By	Date

Login Sample Receipt Checklist

Client: Turner Laboratories, Inc.

Job Number: 550-101943-1

Login Number: 101943
List Number: 1
Creator: Gravlin, Andrea

List Source: TestAmerica Phoenix

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	Check done at department level as required.

Radiation Safety Engineering, Inc.
3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121 (480) 897-9459
Website: www.radsafe.com FAX (480) 892-5446

Radiochemical Activity in Water (pCi/L)

Turner Laboratories
2445 N. Coyote Drive, Ste. 104
Tucson, AZ 85745

Sampling Date: April 23, 2018
Sample Received: May 01, 2018
Analysis Completed: May 22, 2018

Sample ID	Gross Alpha Activity Method 600/00-02 (pCi/L)	Uranium Activity Method ASTM D6239 (pCi/L)	Adjusted Gross Alpha (pCi/L)	Radium 226 Activity Method GammaRay HPGE (pCi/L)	Radium 228 Activity Method GammaRay HPGE (pCi/L)	Total Radium (pCi/L)
18D0619-01	17.7 ± 0.9	12.9 ± 1.2	4.8 ± 1.5	3.1 ± 0.3	3.1 ± 0.4	6.2 ± 0.5
Date of Analysis	5/2/2018	5/21/2018	5/21/2018	5/4/2018	5/4/2018	5/4/2018

Robert L. Metzger, Ph.D., C.H.P. 5/22/2018
Laboratory License Number AZ0462 Date

Radiation Safety Engineering, Inc.
3245 N. WASHINGTON ST. • CHANDLER, ARIZONA 85225-1121 (480) 897-9459
Website: www.radsafe.com FAX (480) 892-5446

Isotopic Uranium Analysis

Turner Laboratories
2445 N. Coyote Drive, Ste. 104
Tucson, AZ 85745

Sampling Date: April 23, 2018
Sample Received: May 01, 2018
Uranium Analysis Date: May 21, 2018

Sample No.	^{238}U	^{235}U	^{234}U	Total	
18D0619-01	6.0 ± 0.6	0.280 ± 0.004	6.6 ± 0.6	12.9 ± 1.2	Activity (pCi/L)
	17.9 ± 1.7	0.131 ± 0.002	0.00106 ± 0.00010	18.0 ± 1.7	Content (µg/L)
	Comments:				

Robert L. Metzger, Ph.D., C.H.P. 5/22/2018
Date

Laboratory License Number AZ0462

Arizona Department of Environmental Quality

Drinking Water Radionuclides-Adjusted Gross Alpha, Radium 226 & 228, Uranium Analysis Report

Samples To Be Taken At Entry Point Into Distribution System (EPDS) Only

PWS ID#: AZ04 _____ PWS Name: _____

April 23, 2018 (Sample Date) 15:55 (Sample Time) (24 hour clock) _____ (Owner/Contact Person)

_____ (Owner/Contact Fax Number) _____ (Owner/Contact Phone Number)

Sample Collection Point

☐ EPDS # _____

Compliance Sample Type:

☐ Reduced Monitoring — Date Q1 collected: _____

☐ Quarterly — Date Q2 collected: _____

☐ Composite of four quarterly samples — Date Q3 collected: _____

Date Q4 collected: _____

*****RADIOCHEMICAL ANALYSIS*****

>>>To be filled out by laboratory personnel<<<

*****Combined Uranium must be reported in micrograms per liter*****

Analysis Method	MCL	Reporting Limit	Contaminant Name	Cont. Code	Analyses Run Date	Result		Exceed MCL
	15 pCi/L		Adjusted Gross Alpha	4000	5/21/2018	4.8 ± 1.5		
600/00-02		3 pCi/L	Gross Alpha	4002	5/2/2018	17.7 ± 0.9		
7500 - Rn			Radon	4004				
ASTM D6239	30 µg/L	1 µg/L	Combined Uranium	4006	5/21/2018	18.0 ± 1.7	µg/L	
			Uranium 234	4007	5/21/2018	0.00106 ± 0.00010		
			Uranium 235	4008	5/21/2018	0.131 ± 0.002		
			Uranium 238	4009	5/21/2018	17.9 ± 1.7		
	5 pCi/L	1 pCi/L	Combined Radium (226,228)	4010	5/4/2018	6.2 ± 0.5		X
GammaRay HPGE		1 pCi/L	Radium 226	4020	5/4/2018	3.1 ± 0.3		
GammaRay HPGE		1 pCi/L	Radium 228	4030	5/4/2018	3.1 ± 0.4		

*****LABORATORY INFORMATION*****

>>>To be filled out by laboratory personnel<<<

Specimen Number: RSE60312

Lab ID Number: AZ0462

Lab Name: Radiation Safety Engineering, Inc.

Printed Name and Phone Number of Laboratory Contact: Robert L. Metzger, Ph.D., C.H.P. (480) 897-9459

Comments: 18D0619-01

Authorized Signature: Robt L. Metzger

Date Public Water System Notified: _____

DWAR 6: 11/2007

SUBCONTRACT ORDER

Turner Laboratories, Inc.

18D0619

SENDING LABORATORY:

Turner Laboratories, Inc.
2445 N. Coyote Drive, Ste #104
Tucson, AZ 85745
Phone: 520.882.5880
Fax: 520.882.9788
Project Manager: Kevin Brim

RECEIVING LABORATORY:

Radiation Safety Engineering, Inc.
3245 N. Washington St.
Chandler, AZ 85225-1121
Phone :(480) 897-9459
Fax: (480) 892-5446
Please CC Kevin Brim Kbrim@turnerlabs.com

Analysis	Expires	Laboratory ID	Comments
Sample ID: 18D0619-01 Drinking Water Sampled:04/23/2018 15:55			
Radiochemistry, Gross Alpha	10/20/2018 15:55		Analyze Uranium and Adjusted Alpha if G. Alpha is > 12
Radiochemistry, Radium 226/228	05/23/2018 15:55		
Containers Supplied:			

H 60312

Released By	Date	Received By	Date
[signature]	4/30/18 16:00	UPS	4/30/18 16:00
Released By	Date	Received By	Date

APPENDIX D

Well Completion Documentation

PIPE TALLY

Project Name.: FCI PTF	Project No.: 129687-007
Well No.: WB-01	Date: 3-30-18
Location: Roseto	Pipe Talley for: WELL INSTAL
Total Depth: 1200	Geologist: E. Bo/USA

Type of Connections: ☐ Welded ☒ T+C ☒ Flush Thread ☐ Other

Pipe	✓	Length (ft)	Length Σ (ft)	Pipe Type	Dist. from sensor bottom to bottom of pipe (feet)	Sensor Type (ACD, CS, ERT)	Sensor ID	Wire Lead ID	Depth of Sensor (feet bgs)
31	✓	20.04	531.48	PVC BLANK					
32	✓	20.03	551.51						
33	✓	10.05	571.56						
34	✓	20.05	591.61						
35	✓	10.06	601.67						
36	✓	10.05	611.72	0.010 PVC SCRN					
37	✓	20.04	631.76	PVC BLANK					
38	✓	20.04	651.80						
39	✓	20.04	671.84						
40	✓	5.02	676.86						
41	✓	0.43	677.29	PVC/FRP					
42	✓	28.73	706.02	FRP					
43	✓	29.74	734.76						
44	✓	28.75	763.51						
45	✓	28.75	792.26						
46	✓	28.75	821.01						
47	✓	28.73	849.74						
48		28.86	878.60						
49	✓	28.40	907.40		18.09, 21.09	ACD			277', 274'
50	✓	28.29	935.69						
51	✓	28.27	963.96						
52		28.29	992.25						
53	✓	28.29	1020.53						
54	✓	28.85	1049.38						
55	✓	28.86	1078.24						
56	✓	28.96	1107.10						
57	✓	28.88	1135.98						
58	✓	28.87	1164.85						
59		10.25	1175.10						
60		2.17	1177.27	TEMP FRP					
		2.72	1179.99	TEMP SS					

Notes:
LANDING Elevation = 6.35' above ground surface

1175-706

SUMMARY OF TALLY

Total Length tallied:	1179.99
Casing Stick-Up:	1.46
Length of Casing Cut-Off:	4.89
Bottom of Well:	1173.64
Screened Interval:	
Total Screen in Hole:	50 ft

Sensor Types: Annular Conductivity Device (ACD), installed as pairs with 3 ft spacing
Conductivity Sensor (CS) 4 sensors with sing lead 20 ft spacing
Electrical Resistivity Tomography (ERT)

HALEY ALDRICH

HALEY ALDRICH

PIPE TALLY

Project Name.: FCI ORF	Project No.: 129687-067
Well No.: WB-61	Date: 3-30-18
Location:	Pipe Talley for: WFCL ENSTAR
Total Depth: 1203	Geologist: C. GRIFFITH

Type of Connections: ☐ Welded ☐ T+C ☐ Flush Thread ☐ Other

Pipe	✓	Length (ft)	Length Σ (ft)	Pipe Type	Dist. from sensor bottom to bottom of pipe (feet)	Sensor Type (ACD, CS, ERT)	Sensor ID	Wire Lead ID	Depth of Sensor (feet bgs)
1	✓	0.34	0.34	SS END CAP					
2	✓	20.02	20.36	PVC BLANK					
3	✓	20.04	40.40	↓					
4	✓	10.05	50.45	0.020 PVC SCRN					
5	✓	20.01	70.46	PVC BLANK					
6	✓	20.01	90.47	↓					
7	✓	20.04	110.51	↓					
8	✓	20.05	130.56	↓					
9	✓	20.04	150.60	↓					
10	✓	20.03	170.63	↓					
11	✓	10.06	180.69	↓					
12	✓	10.05	190.74	0.020 PVC SCRN					
13	✓	20.04	210.78	PVC BLANK					
14	✓	20.02	230.8	↓					
15	✓	20.04	250.84	↓					
16	✓	20.02	270.86	↓					
17	✓	20.05	290.91	↓					
18	✓	20.01	310.92	↓					
19	✓	10.05	320.97	↓					
20	✓	10.05	331.02	0.020 PVC SCRN					
21	✓	20.04	351.06	PVC BLANK					
22	✓	20.03	371.09	↓					
23	✓	20.04	391.13	↓					
24	✓	20.04	411.17	↓					
25	✓	20.04	431.21	↓					
26	✓	20.05	451.26	↓					
27	✓	10.05	461.31	↓					
29	✓	10.04	471.35	0.020 PVC SCRN					
29	✓	20.05	491.40	PVC BLANK					
30	✓	20.04	511.44	↓					

Notes:
1- 316 stainless steel - End cap
PVC = 4" NOM 4.56" OD, 3.72" ID
SCH 80, 0.020 SLOT & BLANK
FRP - Fiberglass 4" NOM 4.50" OD,
3.75" ID Integrated Joint
41 - 316 Stainless steel PVC/FRP
Cross over

SUMMARY OF TALLY

Total Length tallied:	1179.99
Casing Stick-Up:	1.46
Length of Casing Cut-Off:	4.69
Bottom of Well:	1173.64
Screened Interval:	1133.24 - 1123.19, 992.95 - 972.90, 552.67 - 542.62, 512.33 - 502.28, 371.97 - 361.92
Total Screen in Hole:	50.16

Sensor Types: Annular Conductivity Device (ACD), installed as pairs with 3 ft spacing
Conductivity Sensor (CS) 4 sensors with sing lead 20 ft spacing
Electrical Resistivity Tomography (ERT)

* Centralizers stainless steel 316 @ 40' spacing

HALEY ALDRICH

HALEY ALDRICH

Casing Layout

Project Name.:	Florence Copper INC	**Project No.:**	129687-007
Well No.:	WB-01	**Date:**	3/30/2018
Location:	Florence AZ	**Layout for:**	Lower
Total Depth:		**Geologist:**	C.Giusti

Pipe Length		Depth BGS
		782.51
20.04	23	802.55
20.03	22	822.58
20.04	21	842.62
10.05	20	852.67
10.05	19	862.72
20.01	18	882.73
20.05	17	902.78
20.02	16	922.80
20.04	15	942.84
20.02	14	962.86
20.04	13	982.90
10.05	12	992.95
10.06	11	1003.01
20.03	10	1023.04
20.04	9	1043.08
20.05	8	1063.13
20.04	7	1083.17
20.01	6	1103.18
20.01	5	1123.19
10.05	4	1133.24
20.04	3	1153.28
20.02	2	1173.30
0.34	1	1173.64

Pipe Length		Depth BGS
		352.63
28.75	46	381.38
28.75	45	410.13
28.75	44	438.88
28.74	43	467.62
28.73	42	496.35
0.43	41	496.78
5.02	40	501.80
20.04	39	521.84
20.04	38	541.88
20.04	37	561.92
10.05	36	571.97
10.06	35	582.03
20.05	34	602.08
20.05	33	622.13
20.03	32	642.16
20.04	31	662.20
20.04	30	682.24
20.05	29	702.29
10.04	28	712.33
10.05	27	722.38
20.05	26	742.43
20.04	25	762.47
20.04	24	782.51

Pipe Length		Depth BGS
	69	
	68	
	67	
	66	
	65	
	64	
	63	
	62	-6.35
2.72	61	-3.63
2.17	60	-1.46
10.25	59	8.79
28.87	58	37.66
28.88	57	66.54
28.86	56	95.40
28.86	55	124.26
28.85	54	153.11
28.28	53	181.39
28.29	52	209.68
28.27	51	237.95
28.29	50	266.24
28.80	49	295.04
28.86	48	323.90
28.73	47	352.63

SENSOR DETAILS

Sensor Type	Sensor ID	Pipe #	Distance from Bottom of Sensor to Top of Pipe	Depth of Sensor (BGS)
ACD	2			277.00
ACD	1			274.00

Pipe Number	Type
1	SS End Cap
4,12,20,28,36	4" PVC SCH 80 Screen 0.020
2,3,5-11,13-19,21-27,29-35,37-40	4" PVC SCH 80 Blank
41	PVC SCH 80/SCH 40 Blank
42-59	4" FRP
60	TEMP FRP
61	TEMP Stainless Steel

Notes:

HALEY ALDRICH

1/2

ESTIMATED ANNULAR MATERIAL RECORD

Project Name: FCE **Project #.:** 129687-007 **Date:** 3-31-18
Well No.: WB-01 **Geologist:** E. FUSHER / C. GROSS

ANNULAR VOLUME CALCULATIONS

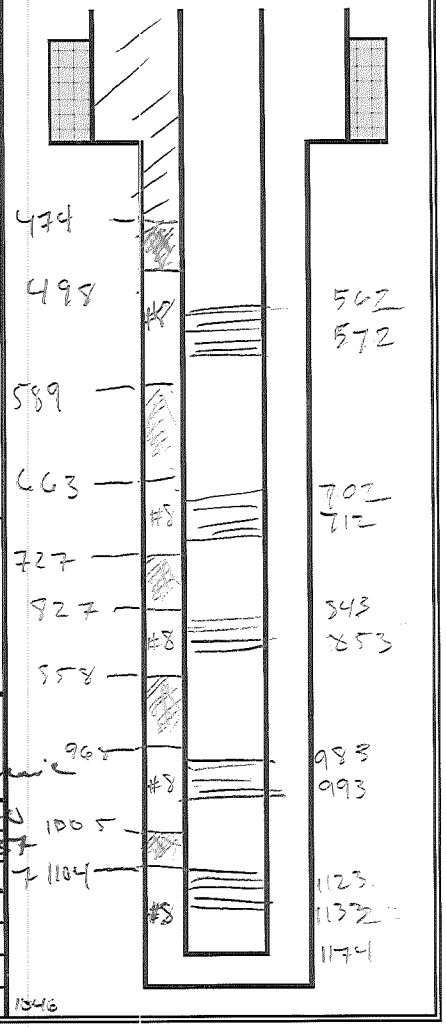
Total Depth of Borehole [T]:	1203 feet	Total Cased Depth:	1175 feet
Borehole Diameter [D]:	12.25 inches	Rat Hole Volume [R=(D^2) 0.005454*L_r]:	22.9 Ft^3
Screen Length [L_s]:	50 feet	Rat Hole Length [L_r]	28 ft feet
Screen Diameter [d_s]:	4.5 inches	Camera Tube Length [L_{ct}]	— feet
Casing Length [L_c]	497 feet	Camera Tube Diameter [d_{ct}]	inches
Casing Diameter [d_c]	4.50 inches		

Screen Annular Volume (A_s): (D^2-d_s^2) 0.005454 = 0.76 Ft^3/Lin. Ft
Casing Annular Volume (A_c): (D^2-d_c^2) 0.005454 = 0.76 Ft^3/Lin. Ft
Casing/Cam.Tube Annular Volume (A_{c+ct}): (D^2-d_c^2-d_{ct}^2) 0.005454 = — Ft^3/Lin. Ft

EQUATIONS

2,700 lbs. Silica Sand = 1 cubic yard = 27 cubic feet
Bentonite Sack = 0.69 ft^3
[1] Volume of bag (Ft^3) = bag weight/100
Silica Sand Super Sack = 3000 lbs.
[2] Calculated depth = Previous Calculated depth - (v/A)

No.	✓	Weight of Bag (lbs.)	Volume of Bag[1] (v) (ft^3)	Total Vol. of Bags (ft^3)	Calculated Depth[2] (ft bls)	Tagged Depth (ft bls)	Comments
1	✓	3000	30	30	1176	NA	#8 SAND SS (1) 1174
2	✓	3000	30	60	1133°	1126	#8 SAND SS (2) 1137
3	✓	1500	15	75	1107°	1109	#8 SAND 1/2 SS 1107
						1104	SWAB 1115-1140 x 15 MIN
						1104	SWAB 1115-1140 x 15 A
4	✓	3000	30	105	1067°	NA	#30 fine Sand SS (1)
5	✓	3000	30	135	1030°	1077	#30 SAND SS (2) TREMIE 1046



0= 13" bore hole = 0.81 ft^3/ln ft based on previous Tag

HALEY ALDRICH

ESTIMATED ANNULAR MATERIAL RECORD (Continued)

Project Name: ECI PTP **Project No.:** 129687-007 **Geologist:** E. Evans, G. Forster
Well No.: WB-03 **Date:** 3-31-18

No.	✓	Weight of Bag (lbs.)	Volume of Bag[1](v) (ft³)	Total Vol. of Bags (ft³)	Calculated Depth[2] (ft bls)	Tagged Depth (ft bls)	Comments	TREMIE
6	✓	1500	15	150	1005°	1005	#30 1/2 super sack	996
7	✓	3000	30	180	968°	968 ✓	super sack ~~#60~~ ? #8 ?	950
8	✓	3000	30	210	930	---	Super Sack #30	Tremie @ 919 ft bls
9	✓	3000	30	240	893		Super Sack #30 attempt to tag [illegible]	893
10	✓	1500	15	255	875	883	Remainder of [illegible] above. Tag @ 893. Pull tremie to	855'
11	✓	1500	15	270	865	890	1/2 super sack #30	855
12	✓	1500	15	285	862	858	1/2 super sack #30	855
13	✓	2000	20	305	837*	827	2/3 supersack ~~#60~~ 8	
							SWAB 15 min 835 - 860	
14	✓	3000	30	335	795*	NA	#30 super sack	761
15	✓	3000	30	365	764*	NA	#30 super sack	761
16	✓	268	2.7	367.7	761*	754	x 4 5 gal buckets #8 sand	730
17	✓	2000	20	387.7	732*	727	2/3 super sack #30 + 4 buckets gravel	713
18	✓	3000	30	427.7	695		1 SS #8	Tremie
19	✓	1500	15	442.7	680	663	1/2 SS #8. Swab from 700-715 x 20	667
15	✓	3000	30	577.7	628		Swab for 25 min. No change in tag. SS #30	
16	✓	3000	30	502.7	595	597	- SS #30	Tremie @ 519
17	✓	1000	10	512.7	587	589	Add 1/3 sack #30	519
18	✓	3000	30	542.7	555		Add sack #8	519
19	✓	3000	30	572.7	521		Add sack #8	519
20	✓	2250	22.5	595.2	495.2	498	Add 3/4 sack #8, swab 20 min 560-575	487
21	✓	50# x 20	10	605.2	488		Add 20 sx #60 choke sand, 50# ea.	456

Notes: ° = 13" borehole (0.91 ft³/ln ft) based on previous log
* = 14" borehole (0.95 ft³/ln ft)
(0.78 ft³/ft)

K:\Templates\Field Forms\Well Inst & Testing Forms.xls

HALEY ALDRICH

ESTIMATED ANNULAR MATERIAL RECORD (Continued)

Project Name: FCI
Well No.: WB-01
Project No.: 129687-007
Date:
Geologist: C. Giusti / G. Fousha

No.	✓	Weight of Bag (lbs.)	Volume of Bag[1](v) (ft^3)	Total Vol. of Bags (ft^3)	Calculated Depth[2] (ft bls)	Tagged Depth (ft bls)	Comments
22	✓	500	5	610.2	483*	NA	x10 bag 50 lbs #30 sand
23	✓	268	2.7	612.9	481*	476	x4 5gal Buckets #8 gravel
24		—	527.7	1140.6	-170	SURFACE	TYPE V CEMENT 94 barrells

Notes: * based on 14" Bore hole (0.95 ft³/ln ft)

HALEY ALDRICH

CEMEX

54375140

Plant:	Begin Loading:	To Job:	Arrive Job:	Start Unload:	Finish Unload:	Leave Job:	Return Plant:

Customer Code: 3181157 Customer Name: FLORENCE COPPER INC

Customer Job Number: FLORENCE WELL 6467 Order Code / Date: 01/11/18

Project Code: 41097304 Project Name: FLORENCE WELL

Project P.O. Number: NO Order P.O. Number: NO PO

Ticket Date: 01/11/18 Delivery Address: 1575 W HUNT HIGHWAY CLEAN DRUM/BATCH RECORDS/

Map Page: Map/Row/Column: PIN PINMY201

Delivery Instructions: HUNT HWY & E/ FELIX RD * MAX SLUMP *

Dispatcher: vstewart

Ticket Number: 44455580

Due On Job:	Slump:	Truck Number:	Driver Number:	Driver Name:	End Use:
13:30	6.00	10031932	411103	CHAMBERS, HELENA	SLU BLDNG: OTHER

LOAD QUANTITY	CUMULATIVE QUANTITY	ORDERED QUANTITY	MATERIAL CODE	PRODUCTION DESCRIPTION	UOM	UNIT PRICE	AMOUNT
7.00	7.00	7.00	1333049	TYPE II/V SLURRY 21 SK CMT/W YD3			
				LEGACY MATERIAL NO:			
1.00	1.00	1.00	1349968	PER DAY DELIVERY	EA		
						JAN 11 '18 13:02	
1.00			1247818	FUEL SURCHARGE ADJ			
1.00			1202749	ENVIRONMENTAL FEE			
1.00			1572392	FREIGHT NON TAXABLE ARIZONA			

☐ Cash ☐ Check ☐ Charge	Check # / Auth Code:	Signature of Driver Receiving Cash:	Cash Received:	Total COD Order Amount to Collect Without Standby Charges:

Comments:

WATER ADDED: _____ GAL YARDS IN DRUM: _____ WHEN ADDED.

SIGNATURE

CURB LINE CROSSED AT OWNER'S/AGENT'S REQUEST:

SIGNATURE

☐ LOAD WAS TESTED BY: _____

Notice: Our drivers will make every effort to place materials where the customer designates, but the Company assumes no responsibility for damages inside curb or property line. Customer agrees to the terms of sale and delivery and accepts concrete as is. Due to important factors which are out of our control after delivery, this Company will not accept any responsibility for the finished results. No credit for returned concrete. Buyers exceptions and claims shall be deemed waived unless made to us in writing within one business day after the receipt of materials.

SPECIAL TERMS: Any water added is at customers own risk. If water is added on job, concrete strength is no longer guaranteed. **WARNING**: Product may cause skin and/or eye irritation. **CAUTION**: Material may be hazardous to your safety and health. Please refer to the backside of this ticket for important safety handling information, and to the material safety data sheets for additional information.

AUTHORIZED SIGNATURE:

X

68UNIVERSAL PREV TRK: LOAD NUM:

CUSTOMER

BASIC ENERGY SERVICES

3451 LeTourneau
Gillette, WY 82718
307-682-5258

Cementing Ticket No. 1719 21391

Date	Customer Order No.		Sect.	Twp.	Range	Truck Called Out	On Location	Job Began	Job Completed
4-2-18							8:00 a.m.	10:00 a.m.	12:oo

Owner	Contractor	Charge To
Florance Copper Mine	Hydro Resources	Hydro West

Mailing Address	City	State

Well No. & Form	Place	County	State
WB-01	copper mine	Pinal	AZ

Depth of Well	Depth of Job	Casing (New / Used)	Size / Weight	Size of Hole / Amt. and Kind of Cement	Cement Left in casing by / Request Necessity
1225	460		5.5 /	12.25 / 2/5	0 feet

Kind of Job	Drillpipe / Tubing	Rotary / Cable	Truck No.
West Bank Production Well	2 7/8		28983

Price Reference No. _____
Price of Job 1210
Second Stage _____
Pump Truck Mileage 3825
P.U. Mileage 765
Other Charges _____
Total Charges 5,800.00

Remarks
safety meeting held
rig up to tubing with hose and valve
pump 5 bbls to clear tubing
pump and mix 390 sks type 2/5 cement
displace .5 bbl thru mixer
rig down from tubing
wash up in cellar
good cement to surface
THANK YOU

Cementer Bryan Hammond Lead Yield 1.38 Lead Wt. 14.6 Lead Water 6.8 SV 94
Helper Daniel Johnson Tail Yield _____ Tail Wt. _____ Lead Water _____ SV _____
District Gillette State Wy

The above job was done under supervision of the owner, operator, or his agent whose signature appears below.

Rick Hacker
Agent of contractor or operator

Sales Ticket for Materials Only

QUANTITY SACKS	BRAND AND TYPE	PRICE	TOTAL
16	Crew subsistance	500	8,000.00
10	Transportaton of cement	150	1,500.00
			0.00
			0.00
			0.00
	P.O. # 152614		0.00
	Expected used=20 yrds=391 sks		0.00
	used=390 sks		0.00
			0.00
			0.00
			0.00
			0.00
			0.00
Plugs			0.00

Equipment #	HRS				
28983	1.5	390	Handling & Dumping	2.44	951.60
84127	1		Mileage		0.00
			Sub Total		16,251.60
			Discount		
			Sales Tax		
			Total		

Signature of operator Bryan Hammond

APPENDIX E

Geophysical Logs

Southwest Exploration Services, LLC

borehole geophysics & video services

COMPANY	FLORENCE COPPER
WELL ID	WB-01
FIELD	FLORENCE COPPER
COUNTY	PINAL
STATE	ARIZONA

TYPE OF LOGS: E-LOGS

MORE: NAT. GAMMA

LOCATION

SEC TWP RGE

OTHER SERVICES
SONIC
DEVIATION
TEMP/FLUID COND.
CALIPER

PERMANENT DATUM		ELEVATION	K.B.
LOG MEAS. FROM	GROUND LEVEL	ABOVE PERM. DATUM	D.F.
DRILLING MEAS. FROM	GROUND LEVEL		G.L.

DATE	3-30-18	TYPE FLUID IN HOLE	FORMATION WATER
RUN No	1	MUD WEIGHT	N/A
TYPE LOG	E-LOG - GAMMA	VISCOSITY	N/A
DEPTH-DRILLER	1203 FT.	LEVEL	FULL
DEPTH-LOGGER	1203 FT.	MAX. REC. TEMP.	28.11 DEG. C
BTM LOGGED INTERVAL	1203 FT.	IMAGE ORIENTED TO:	N/A
TOP LOGGED INTERVAL	SURFACE	SAMPLE INTERVAL	0.2 FT
DRILLER / RIG#	HYDRO RESOURCES	LOGGING TRUCK	TRUCK #750
RECORDED BY / Logging Eng.	E. TURNER	TOOL STRING/SN	GEOVISTA E-LOG SN 7055
WITNESSED BY	H&A	LOG TIME:ON SITE/OFF SITE	6:45 A.M.

RUN	BOREHOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	?	SURFACE	40 FT.	14"	STEEL	SURFACE	40 FT.
2	12 1/4"	40 FT.	TOTAL DEPTH				
3							

COMMENTS:

.

Tool Summary:

Date	3-30-18	**Date**	3-30-18	**Date**	3-30-18			
Run No.	1	**Run No.**	2	**Run No.**	3			
Tool Model	QL DEV-GCFTC	**Tool Model**	MSI 60MM SONIC	**Tool Model**	GEOVISTA E-LOG			
Tool SN	163102	**Tool SN**	5050	**Tool SN**	7055			
From	SURFACE	**From**	SURFACE	**From**	SURFACE			
To	1203 FT.	**To**	1203 FT.	**To**	1203 FT.			
Recorded By	E. TURNER	**Recorded By**	E. TURNER	**Recorded By**	E. TURNER			
Truck No	750	**Truck No**	750	**Truck No**	750			
Operation Check	3-29-18	**Operation Check**	3-29-18	**Operation Check**	3-29-18			
Calibration Check	3-29-18	**Calibration Check**	N/A	**Calibration Check**	3-29-18			
Time Logged	07:35 AM	**Time Logged**	8:55 A.M.	**Time Logged**	10:00 A.M.			

Date		**Date**		**Date**				
Run No.	4	**Run No.**	5	**Run No.**	6			
Tool Model		**Tool Model**		**Tool Model**				
Tool SN		**Tool SN**		**Tool SN**				
From		**From**		**From**				
To		**To**		**To**				
Recorded By		**Recorded By**		**Recorded By**				
Truck No		**Truck No**		**Truck No**				
Operation Check		**Operation Check**		**Operation Check**				
Calibration Check		**Calibration Check**		**Calibration Check**				
Time Logged		**Time Logged**		**Time Logged**				

Additional Comments:

Caliper Arms Used: 15 IN. **Calibration Points:** 4 IN. & 24IN.

E-Log Calibration Range: 1 - 1000 OHM-M **Calibration Points:** 1 & 1000 OHM-M

Disclaimer:

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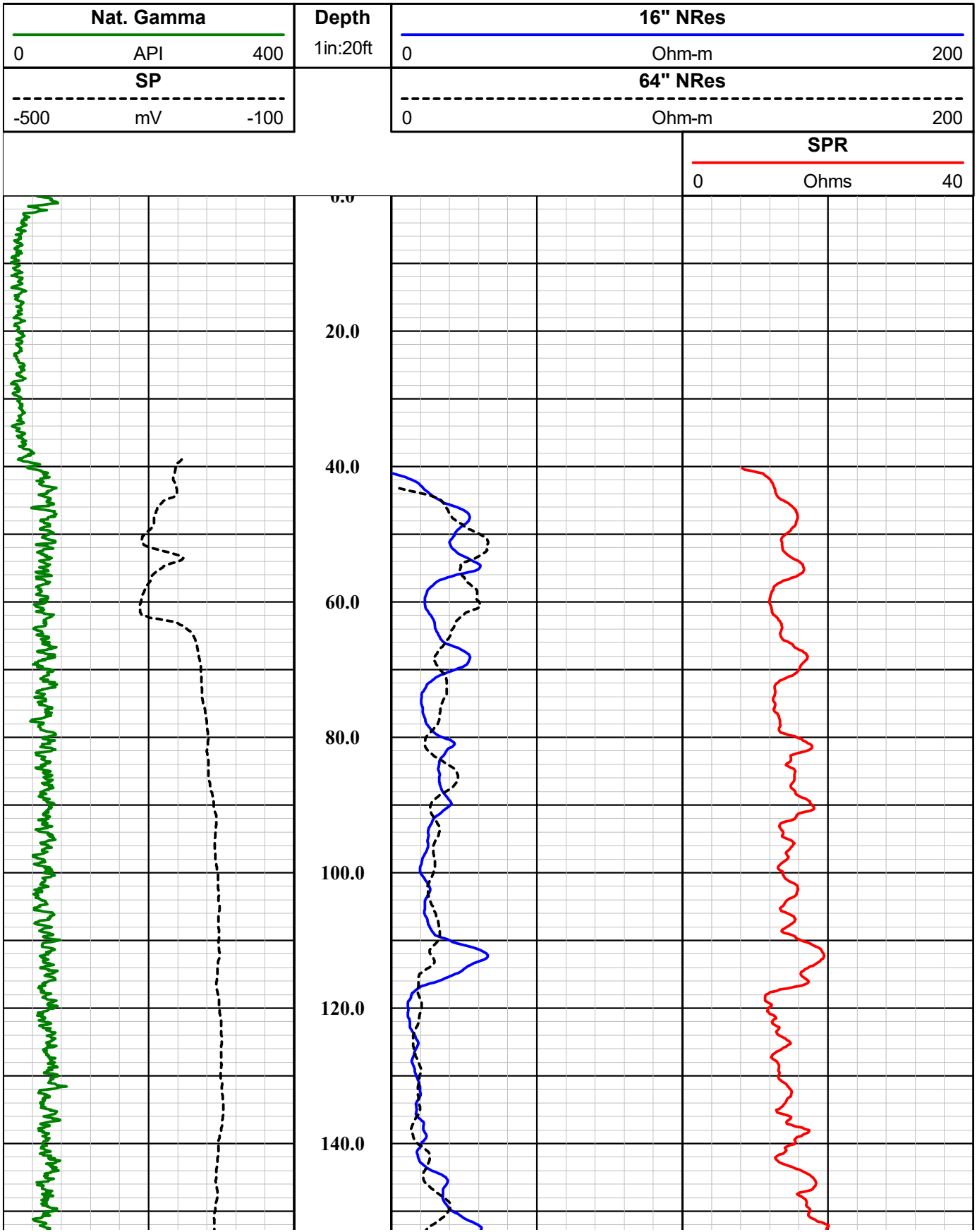

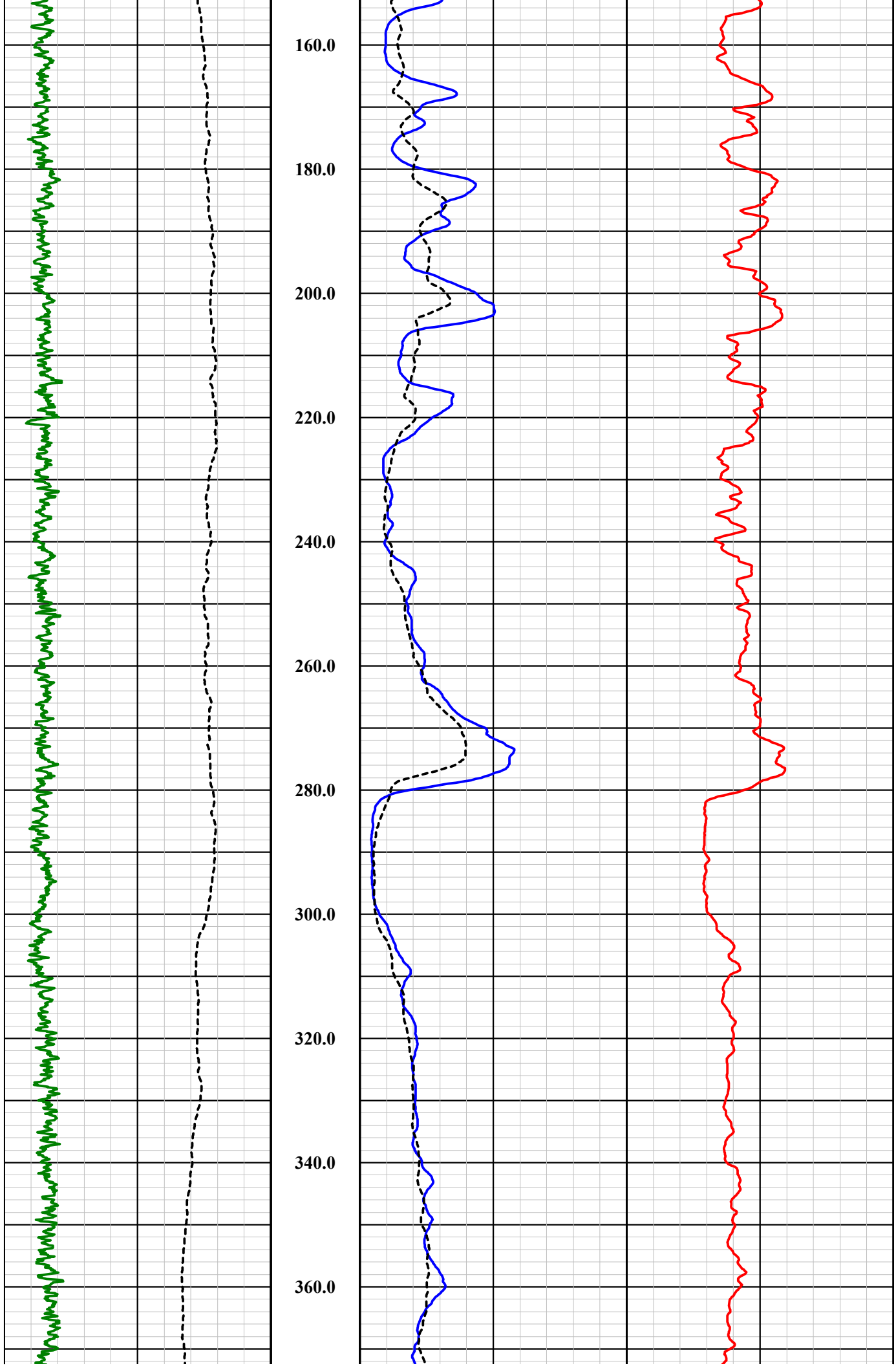
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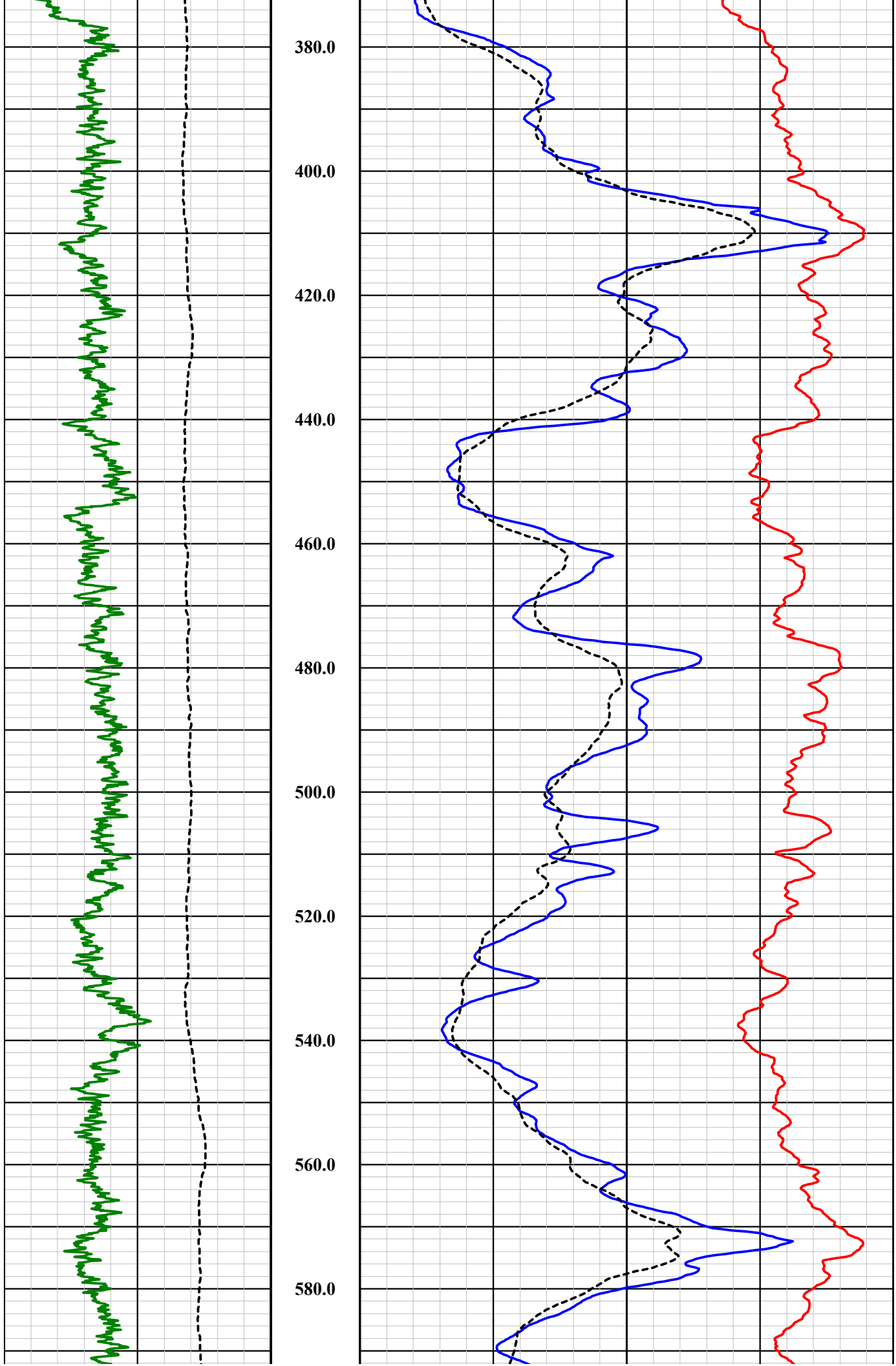
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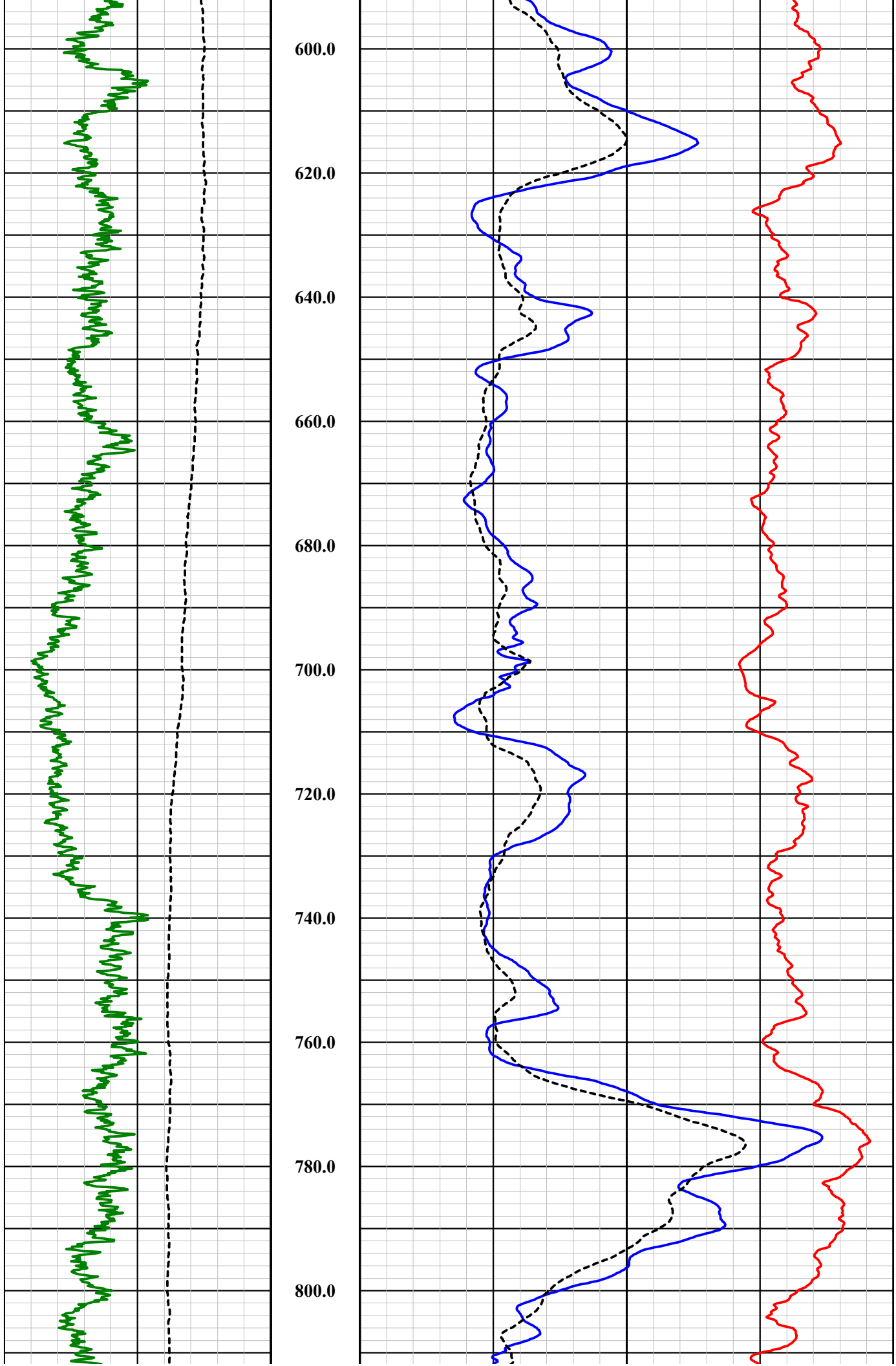
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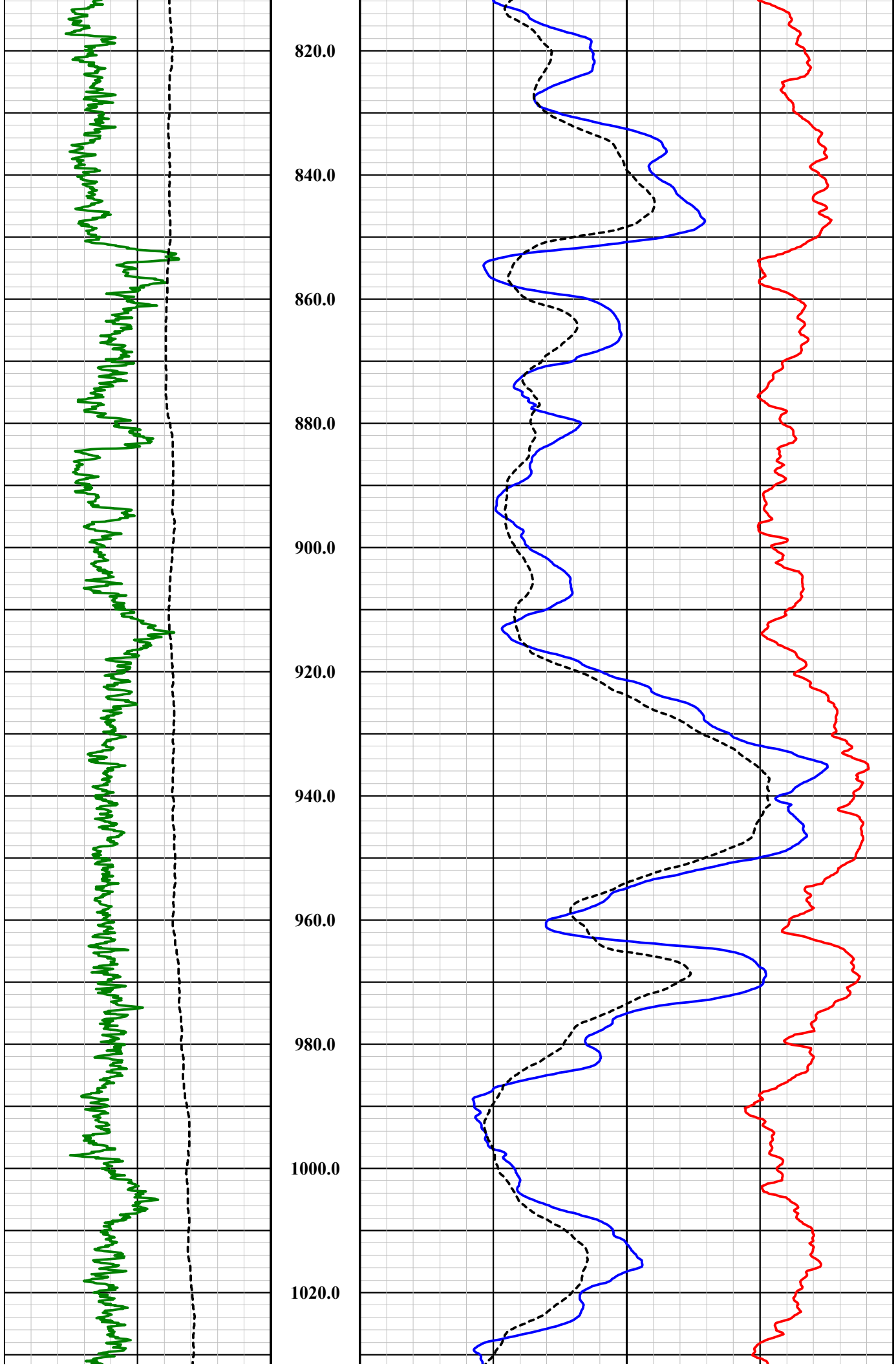
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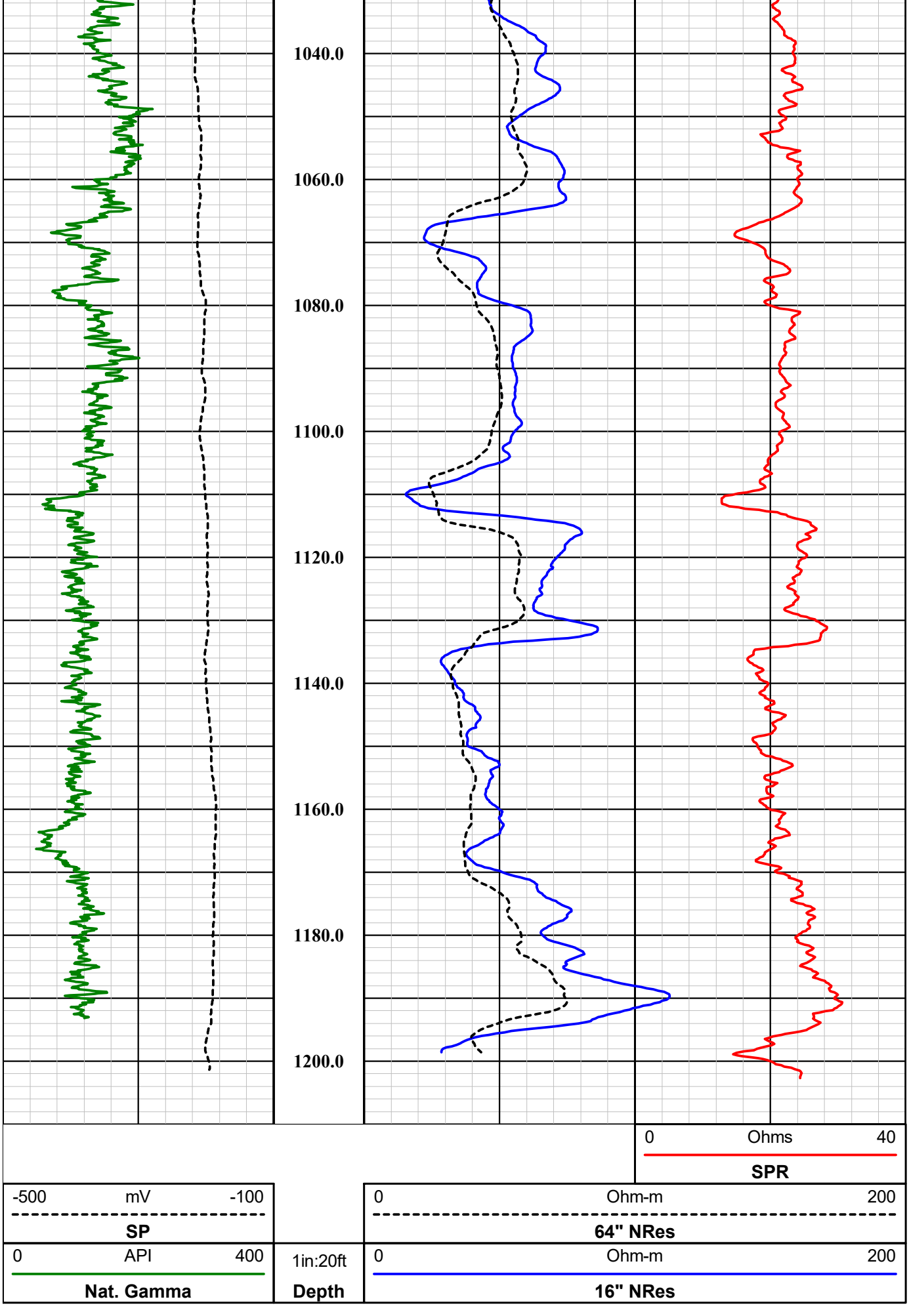

GeoVista E-Log Tool

Probe Top = Depth Ref.

Tool SN: 4035 & 4790

Bridle connects to wireline cablehead: Wireline armor is the B Electrode.

Four Conductor Probe Top

Bridle Electrode (N Electrode)

64" Normal Resistivity Electrode/Spontaneous Potential Electrode (M Electrode)

Probe Length = 2.3 m or 7.55 ft
Bridle Length = 10.0 m or 32.81 ft

Probe Weight = 7.0 kg or 15.4 lbs

Can only be collected in fluid

Isolation Bridle - Not shown in diagram but is necessary for operation

Electrode Measuring Points (from bottom of probe)
- Spontaneous Potential (SP): 0.65 m or 2.13 ft
- 16" Normal Resistivity (16" NRes): 0.50 m or 1.64 ft
- 64" Normal Resistivity (64" NRes): 1.10 m or 3.61 ft
- Single Point Resistance (SPR): 0.25 m or 0.82 ft

Temperature Rating: 80 Deg C (176 Deg F)
Presure Rating: 200 bar (2900 psi)

16" Normal Resistivity Electrode (M Electrode)

Current Electrode/Single Point Resistance (A Electrode)

1.65" or 42 mm Diameter

Southwest Exploration Services, LLC

borehole geophysics & video services

Company	FLORENCE COPPER
Well	WB-01
Field	FLORENCE COPPER
County	PINAL
State	ARIZONA

Final E-Log Summary

Southwest Exploration Services, LLC

borehole geophysics & video services

COMPANY	FLORENCE COPPER
WELL ID	WB-01
FIELD	FLORENCE COPPER
COUNTY	PINAL
STATE	ARIZONA

TYPE OF LOGS: GAMMA - CALIPER
MORE: TEMP. / FLUID COND.

LOCATION

SEC TWP RGE

OTHER SERVICES
SONIC
ELOGS
DEVIATION

PERMANENT DATUM		ELEVATION	K.B.
LOG MEAS. FROM	GROUND LEVEL	ABOVE PERM. DATUM	D.F.
DRILLING MEAS. FROM	GROUND LEVEL		G.L.

DATE	3-30-18	TYPE FLUID IN HOLE	FORMATION WATER
RUN No	1	MUD WEIGHT	N/A
TYPE LOG	GAMMA - CALIPER - FTC	VISCOSITY	N/A
DEPTH-DRILLER	1203 FT.	LEVEL	FULL
DEPTH-LOGGER	1203 FT.	MAX. REC. TEMP.	28.11 DEG. C
BTM LOGGED INTERVAL	1203 FT.	IMAGE ORIENTED TO:	N/A
TOP LOGGED INTERVAL	SURFACE	SAMPLE INTERVAL	0.2 FT
DRILLER / RIG#	HYDRO RESOURCES	LOGGING TRUCK	TRUCK #750
RECORDED BY / Logging Eng.	E. TURNER	TOOL STRING/SN	QL COMBO TOOL SN 6292
WITNESSED BY	H&A	LOG TIME:ON SITE/OFF SITE	6:45 A.M.

RUN	BOREHOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	?	SURFACE	40 FT.	14"	STEEL	SURFACE	40 FT.
2	12 1/4"	40 FT.	TOTAL DEPTH				
3							

COMMENTS:

.

Tool Summary:

Date	3-30-18	**Date**	3-30-18	**Date**	3-30-18	**Date**		**Date**	
Run No.	1	**Run No.**	2	**Run No.**	3	**Run No.**	4	**Run No.**	5
Tool Model	QL DEV-GCFTC	**Tool Model**	MSI 60MM SONIC	**Tool Model**	GEOVISTA E-LOG	**Tool Model**		**Tool Model**	
Tool SN	163102	**Tool SN**	5050	**Tool SN**	7055	**Tool SN**		**Tool SN**	
From	SURFACE	**From**	SURFACE	**From**	SURFACE	**From**		**From**	
To	1203 FT.	**To**	1203 FT.	**To**	1203 FT.	**To**		**To**	
Recorded By	E. TURNER	**Recorded By**	E. TURNER	**Recorded By**	E. TURNER	**Recorded By**		**Recorded By**	
Truck No	750	**Truck No**	750	**Truck No**	750	**Truck No**		**Truck No**	
Operation Check	3-29-18	**Operation Check**	3-29-18	**Operation Check**	3-29-18	**Operation Check**		**Operation Check**	
Calibration Check	3-29-18	**Calibration Check**	N/A	**Calibration Check**	3-29-18	**Calibration Check**		**Calibration Check**	
Time Logged	07:35 AM	**Time Logged**	8:55 A.M.	**Time Logged**	10:00 A.M.	**Time Logged**		**Time Logged**	

Additional Comments:

Caliper Arms Used: 15 IN. **Calibration Points:** 4 IN. & 24IN.

E-Log Calibration Range: 1 - 1000 OHM-M **Calibration Points:** 1 & 1000 OHM-M

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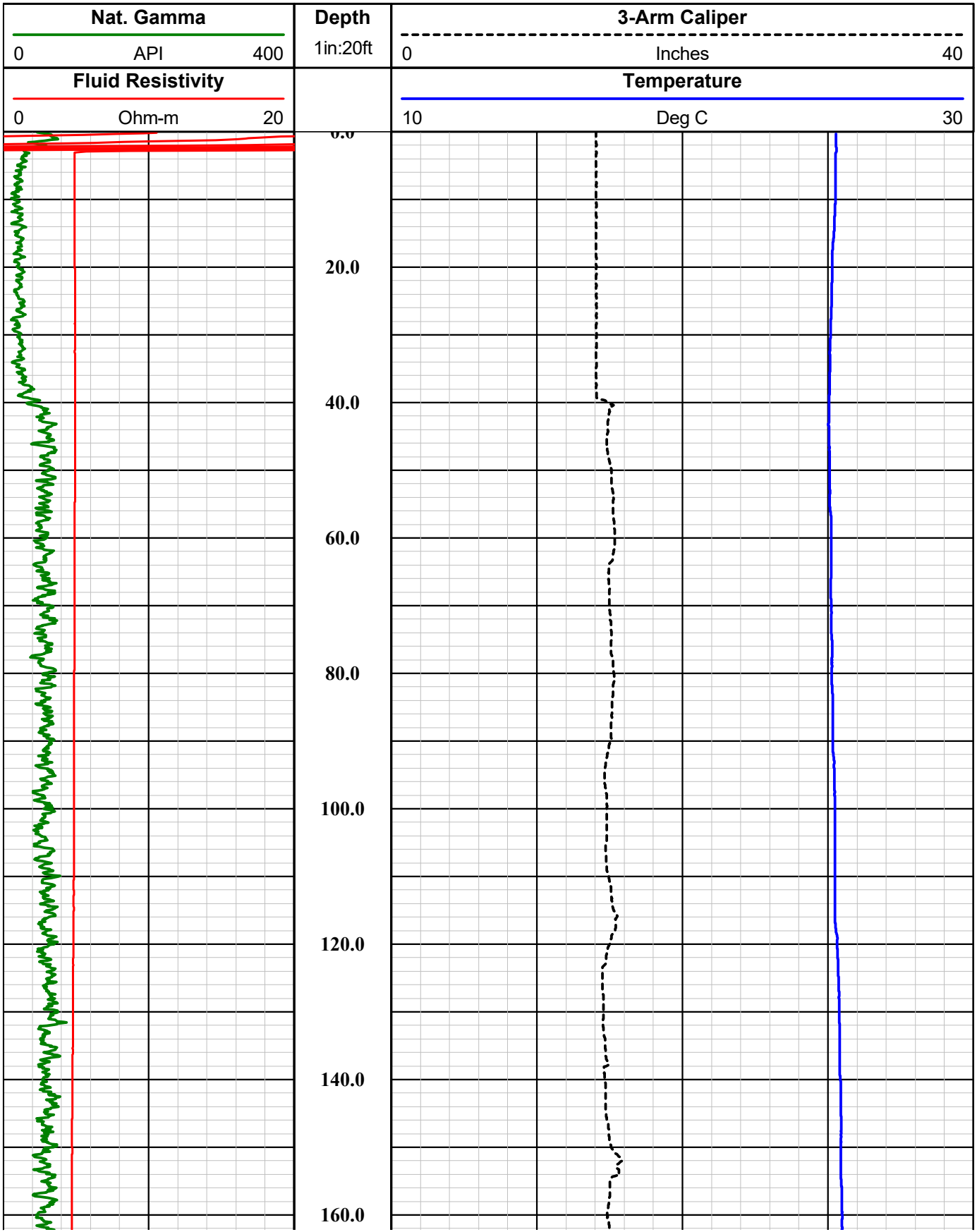

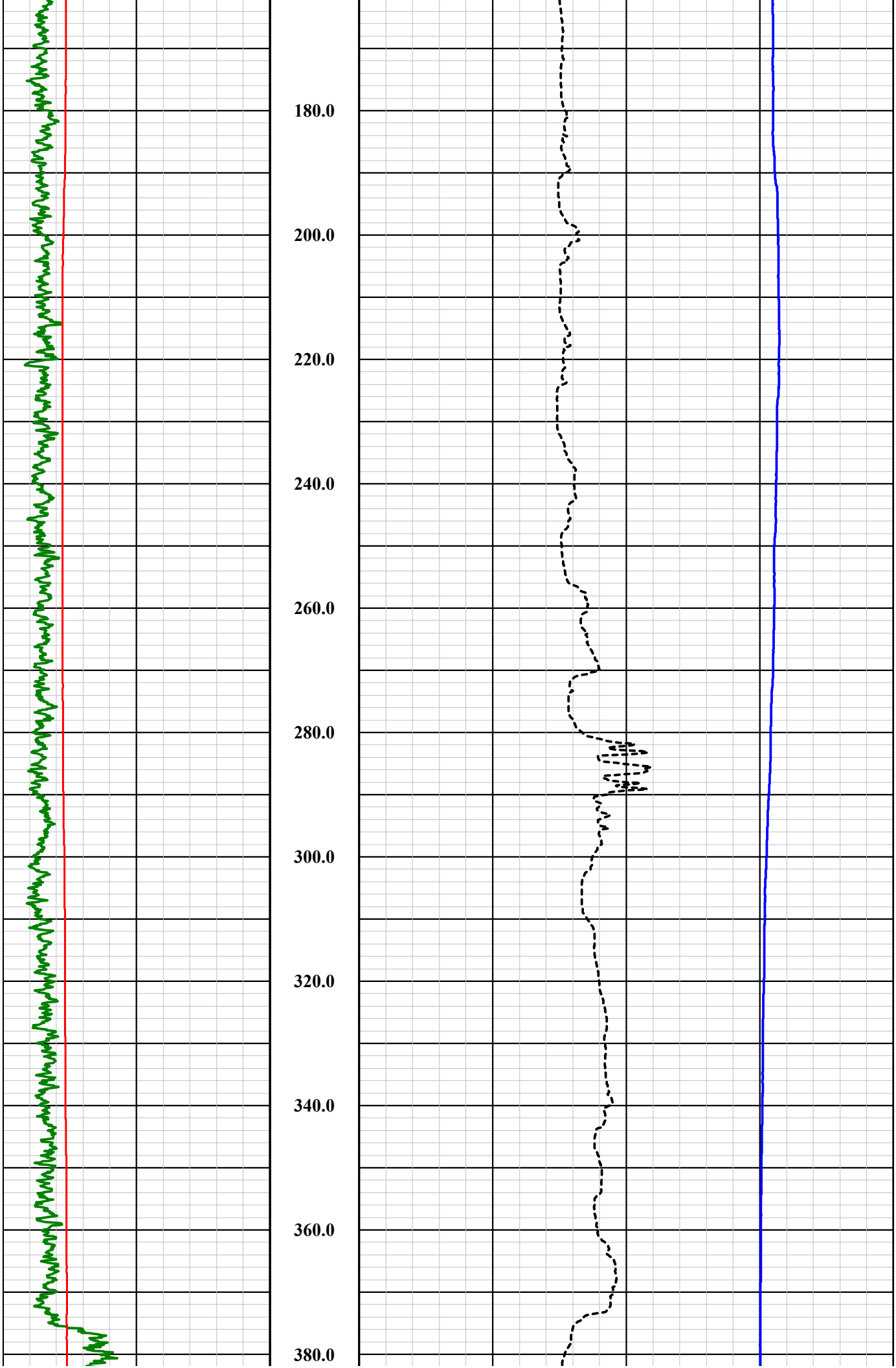
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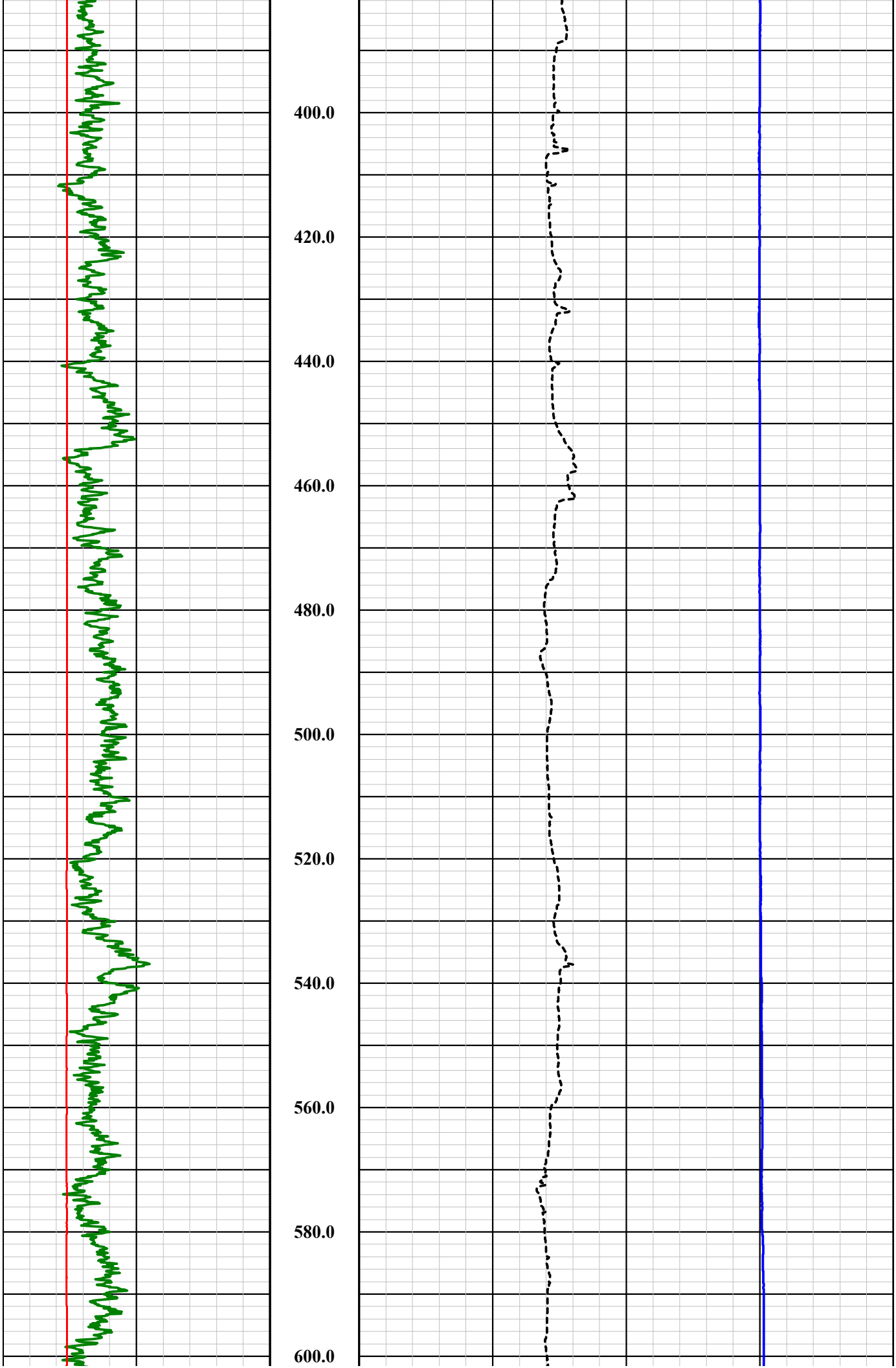
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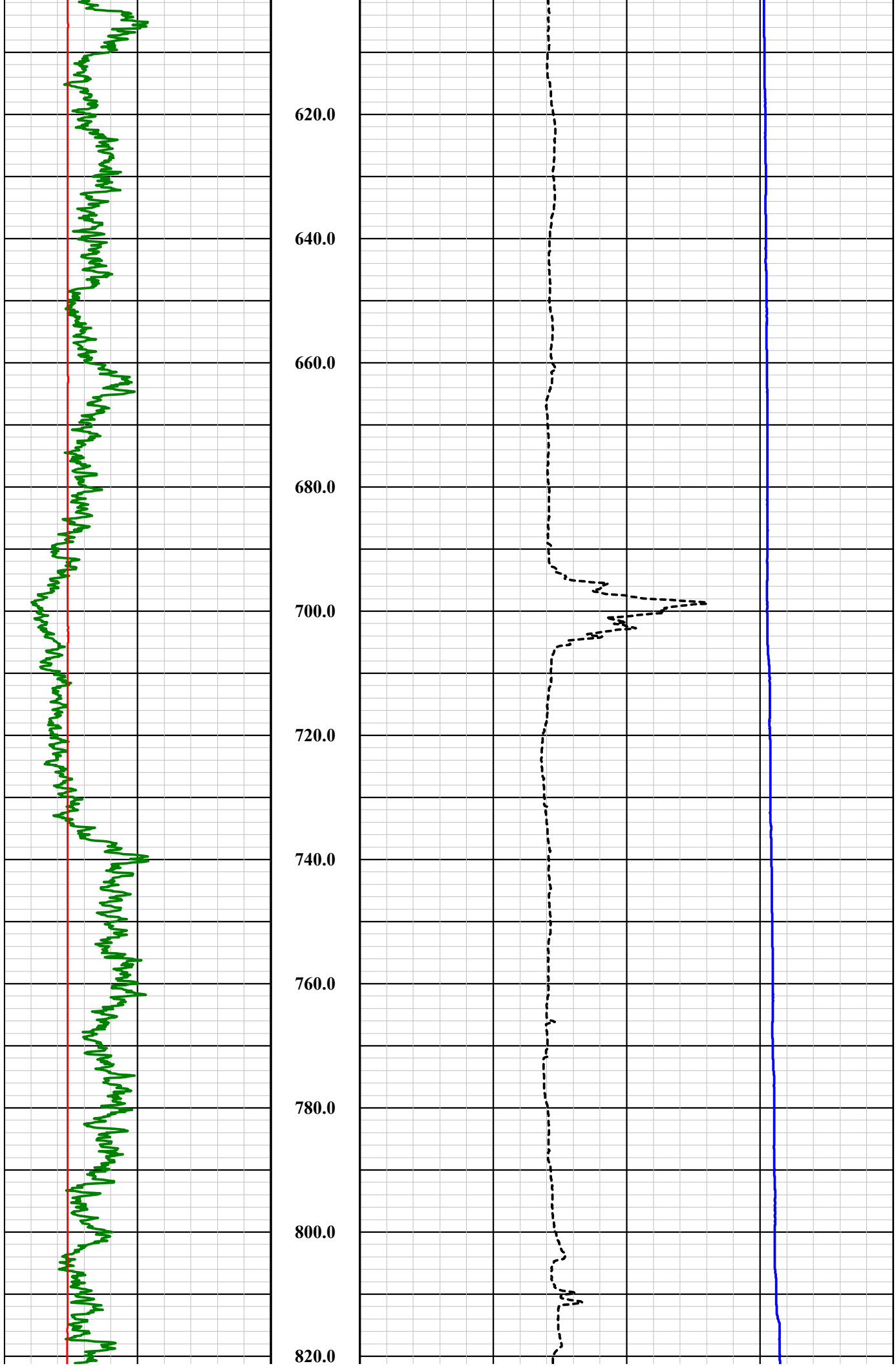
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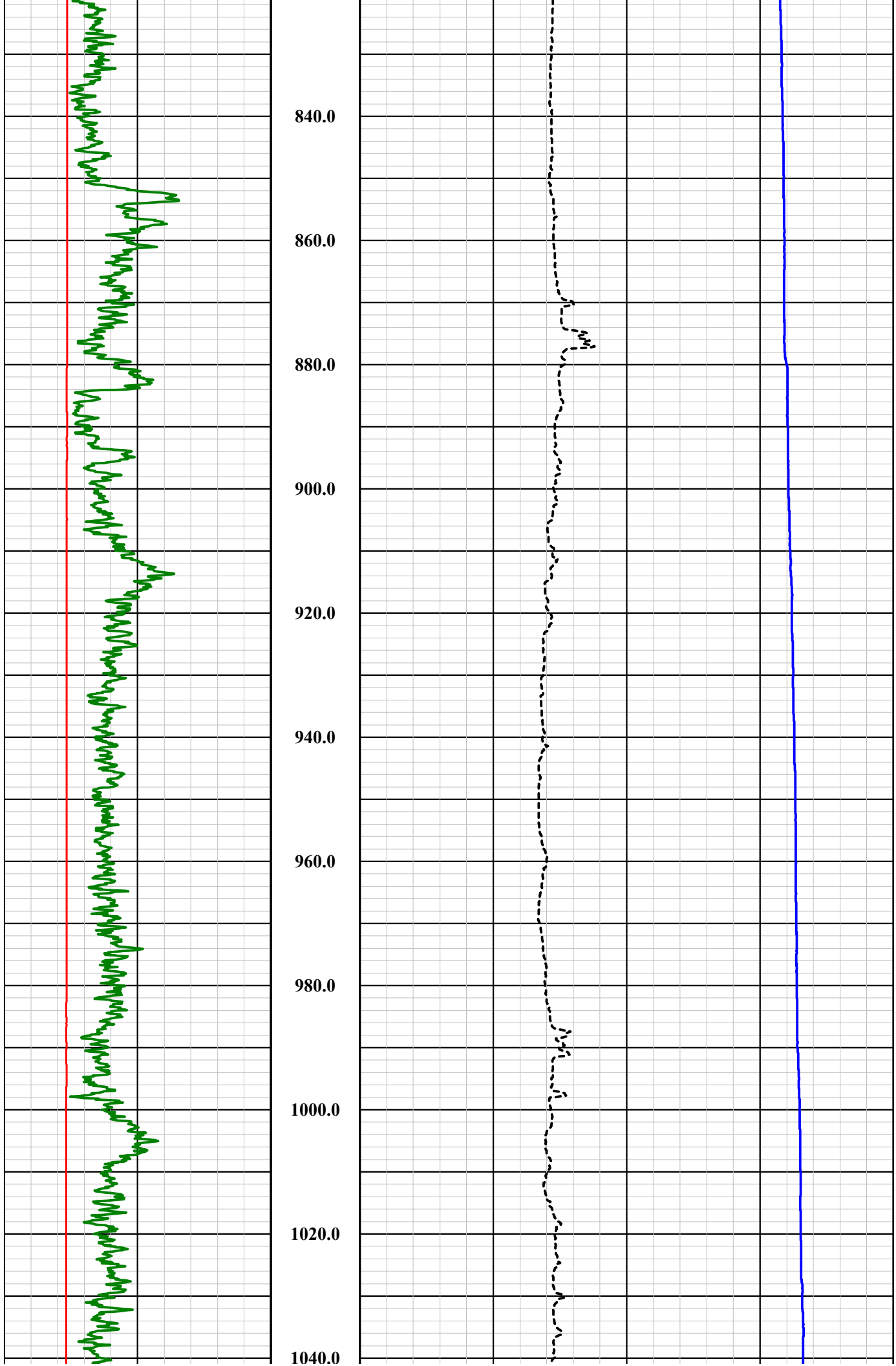
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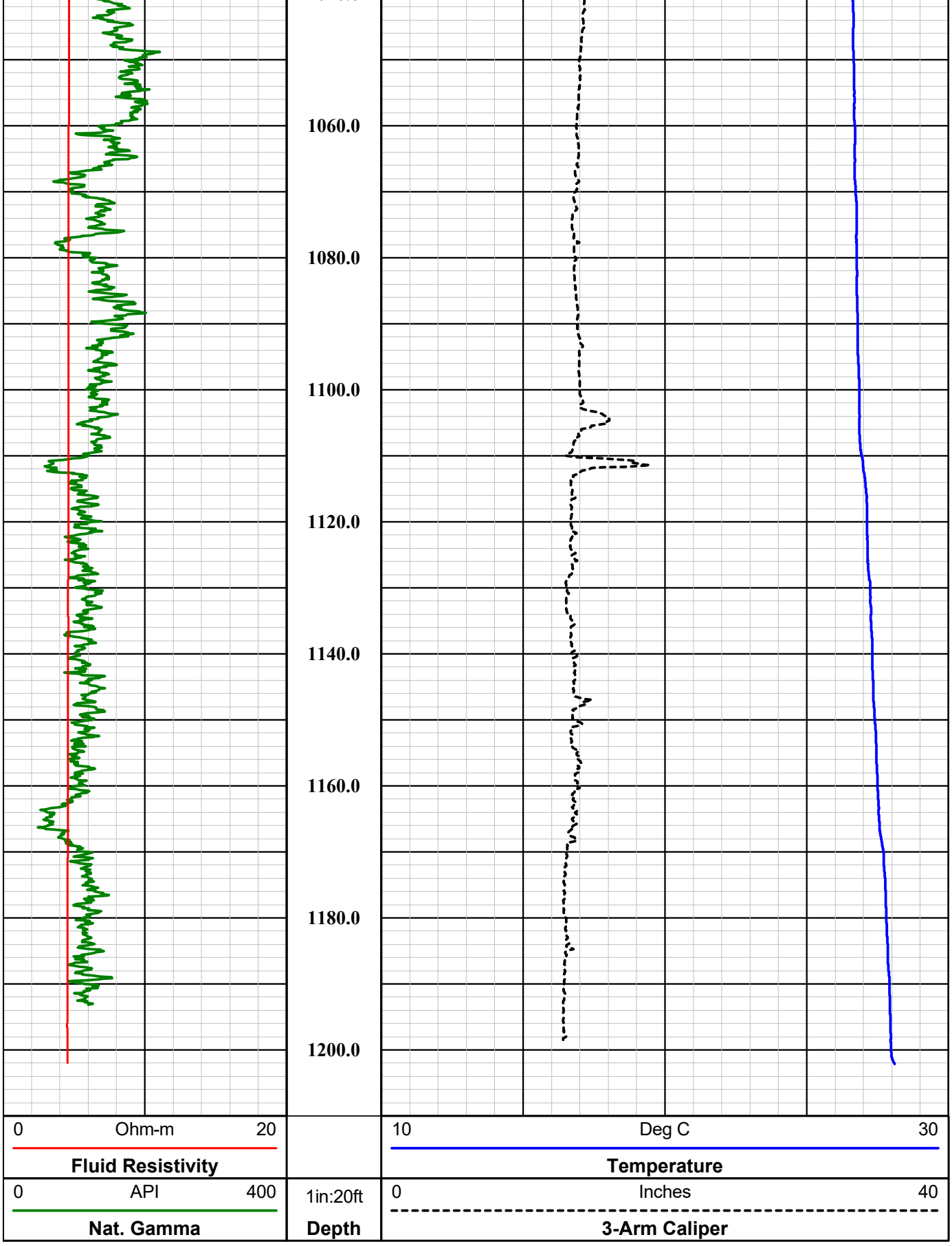
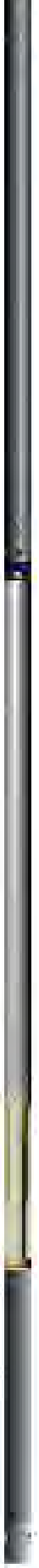


QL40 Gamma-Caliper-Temperature-Fluid Conductivity

Probe Top = Depth Ref.

Tool SN: 5613, 5979, 6161 & 6292

Four Conductor MSI Probe Top



Probe Length = 3.69 m or 12.12 ft
Probe Weight = 18.195 kg or 40.11 lbs

Caliper arms can only collect data logging up hole

Fluid Temperature/Conductivity and Natural Gamma can be collected logging up and down hole

Temperature Rating: 80 Deg C (176 Deg F)
Presure Rating: 200 bar (2900 psi)

Natural Gamma Ray = 1.07 m (42.12 in)

3-Arm Caliper = 1.78 m (70.27 in)

Available Arm Sizes: 3", 9", and 15"

FTC (Fluid Temperature/Conductivity) = 0.78 m (30.71 in)

1.57" or 40.0 mm Diameter

Southwest Exploration Services, LLC

Company	FLORENCE COPPER
Well	WB-01
Field	FLORENCE COPPER

borehole geophysics & video services

County	PINAL
State	ARIZONA

Final GCFTC Summary

Southwest Exploration Services, LLC

borehole geophysics & video services

COMPANY	FLORENCE COPPER
WELL ID	WB-01
FIELD	FLORENCE COPPER
COUNTY	PINAL
STATE	ARIZONA

TYPE OF LOGS: 60MM SONIC
MORE: NAT. GAMMA-CALIPER

LOCATION

SEC TWP RGE

OTHER SERVICES
ELOGS
DEVIATION
TEMP/FLUID COND.

PERMANENT DATUM		ELEVATION	K.B.
LOG MEAS. FROM	GROUND LEVEL	ABOVE PERM. DATUM	D.F.
DRILLING MEAS. FROM	GROUND LEVEL		G.L.

DATE	3-30-18	TYPE FLUID IN HOLE	FORMATION WATER
RUN No	2	MUD WEIGHT	N/A
TYPE LOG	SONIC-GAMMA-CALIPER	VISCOSITY	N/A
DEPTH-DRILLER	1203 FT.	LEVEL	FULL
DEPTH-LOGGER	1203 FT.	MAX. REC. TEMP.	28.11 DEG. C
BTM LOGGED INTERVAL	1203 FT.	IMAGE ORIENTED TO:	N/A
TOP LOGGED INTERVAL	SURFACE	SAMPLE INTERVAL	0.2 FT
DRILLER / RIG#	HYDRO RESOURCES	LOGGING TRUCK	TRUCK #750
RECORDED BY / Logging Eng.	E. TURNER	TOOL STRING/SN	MSI 60MM SONIC SN 5050
WITNESSED BY	H&A	LOG TIME:ON SITE/OFF SITE	6:45 A.M.

RUN	BOREHOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	?	SURFACE	40 FT.	14"	STEEL	SURFACE	40 FT.
2	12 1/4"	40 FT.	TOTAL DEPTH				
3							

COMMENTS:

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Tool Summary:

Date	3-30-18	**Date**	3-30-18	**Date**	3-30-18		**Date**		
Run No.	1	**Run No.**	2	**Run No.**	3		**Run No.**	4	5	6
Tool Model	QL DEV-GCFTC	**Tool Model**	MSI 60MM SONIC	**Tool Model**	GEOVISTA E-LOG		**Tool Model**			
Tool SN	163102	**Tool SN**	5050	**Tool SN**	7055		**Tool SN**			
From	SURFACE	**From**	SURFACE	**From**	SURFACE		**From**			
To	1203 FT.	**To**	1203 FT.	**To**	1203 FT.		**To**			
Recorded By	E. TURNER	**Recorded By**	E. TURNER	**Recorded By**	E. TURNER		**Recorded By**			
Truck No	750	**Truck No**	750	**Truck No**	750		**Truck No**			
Operation Check	3-29-18	**Operation Check**	3-29-18	**Operation Check**	3-29-18		**Operation Check**			
Calibration Check	3-29-18	**Calibration Check**	N/A	**Calibration Check**	3-29-18		**Calibration Check**			
Time Logged	07:35 AM	**Time Logged**	8:55 A.M.	**Time Logged**	10:00 A.M.		**Time Logged**			

Additional Comments:

Caliper Arms Used: 15 IN. **Calibration Points:** 4 IN. & 24IN.

E-Log Calibration Range: 1 - 1000 OHM-M **Calibration Points:** 1 & 1000 OHM-M

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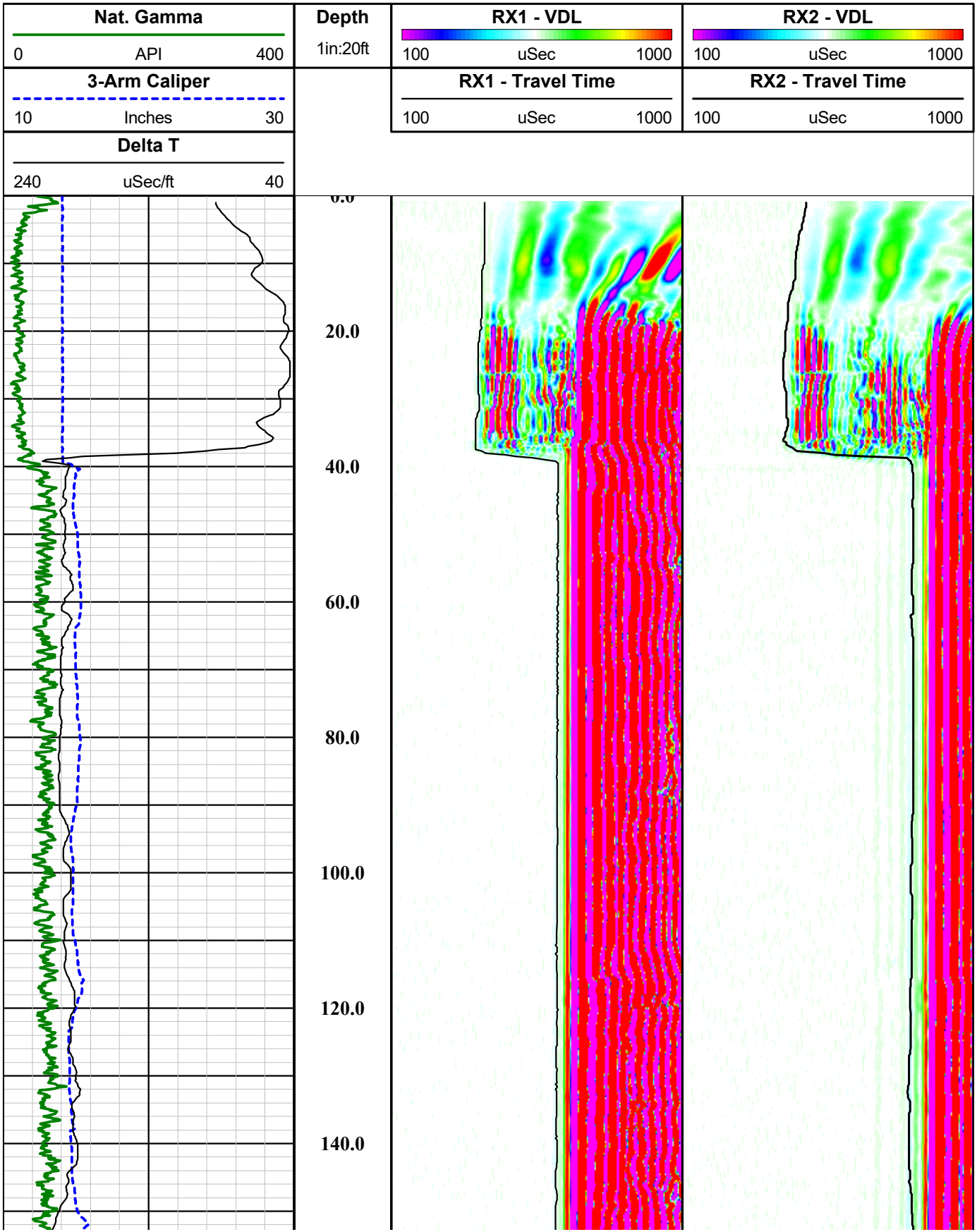

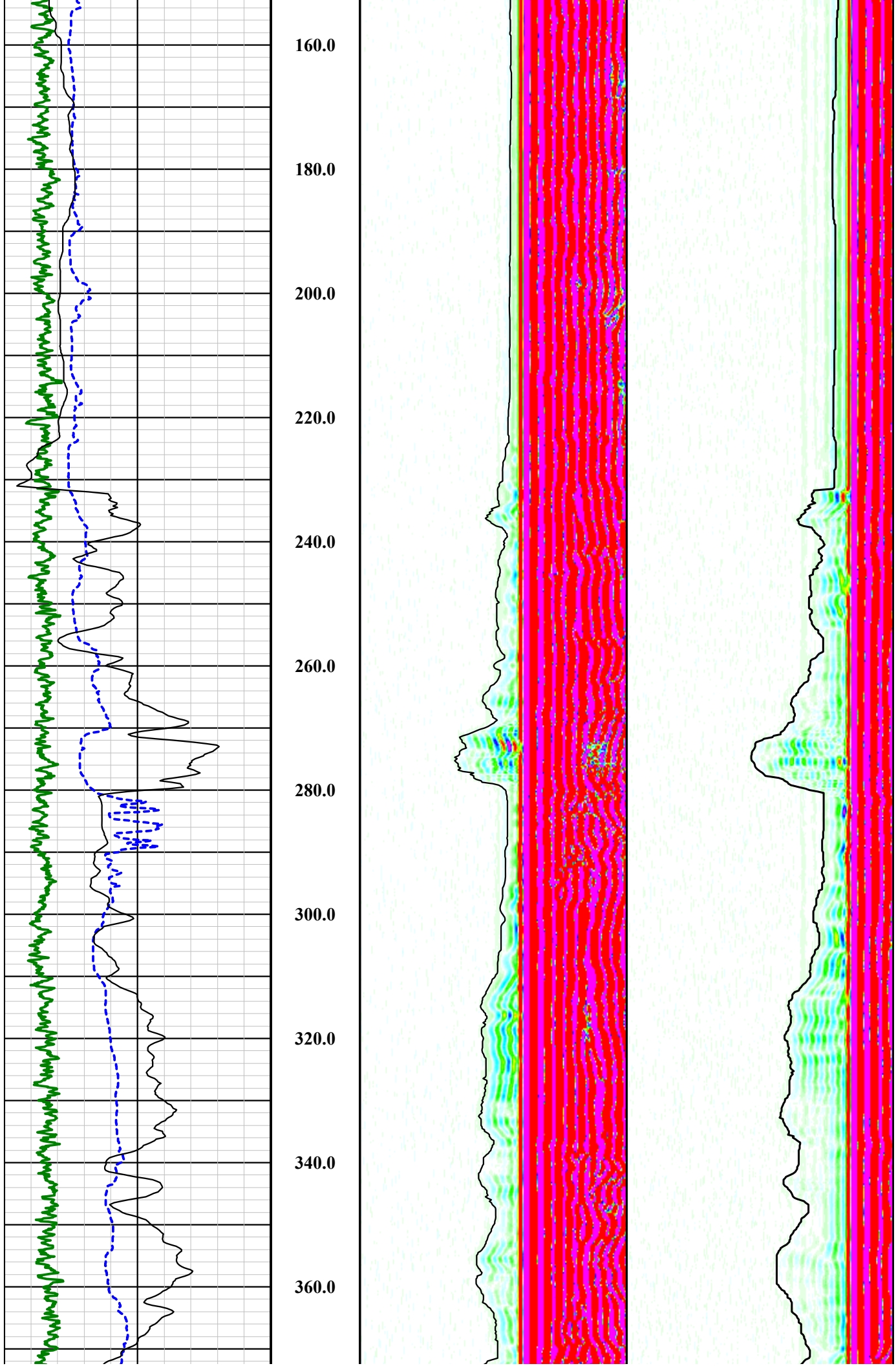
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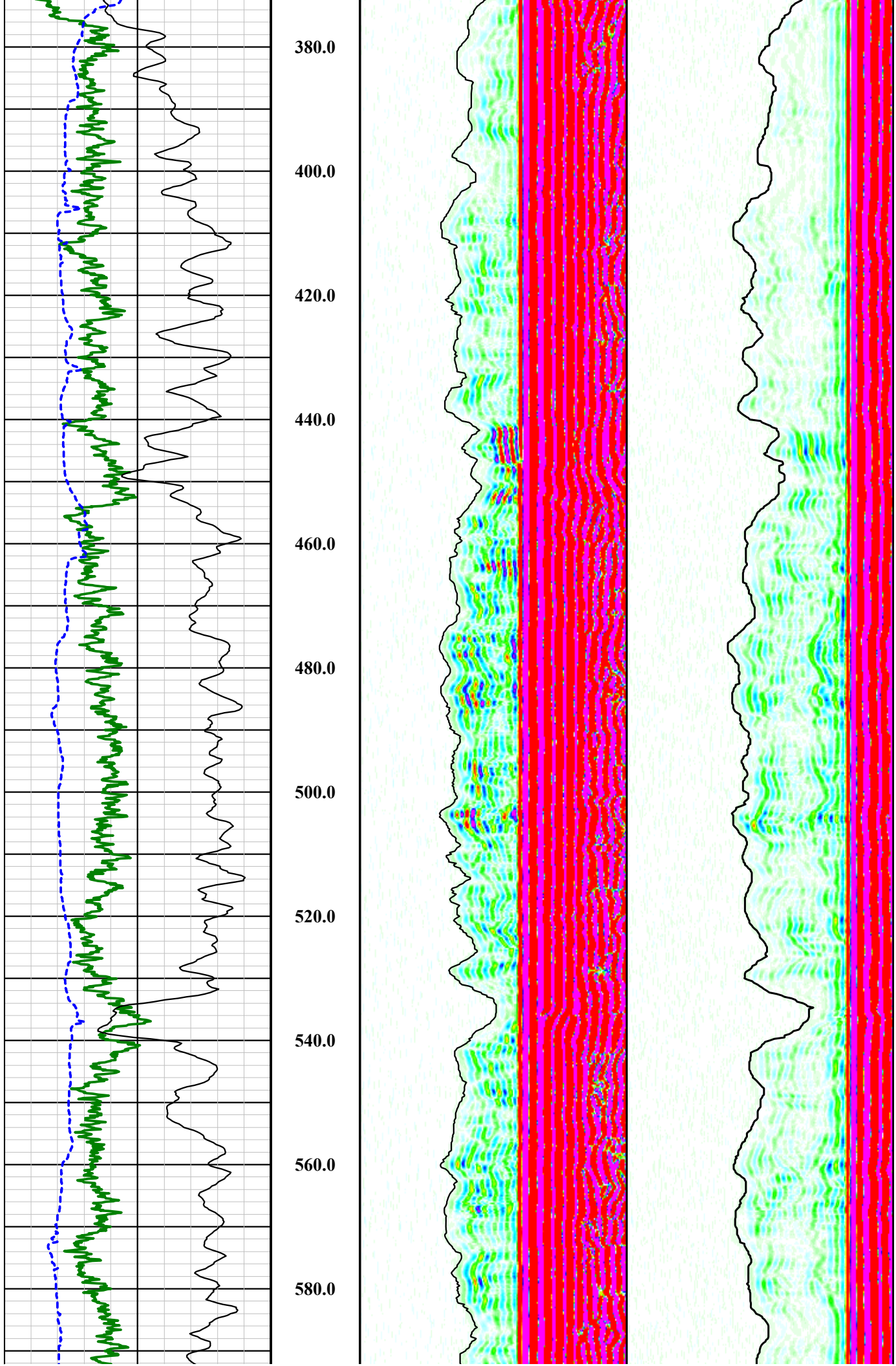
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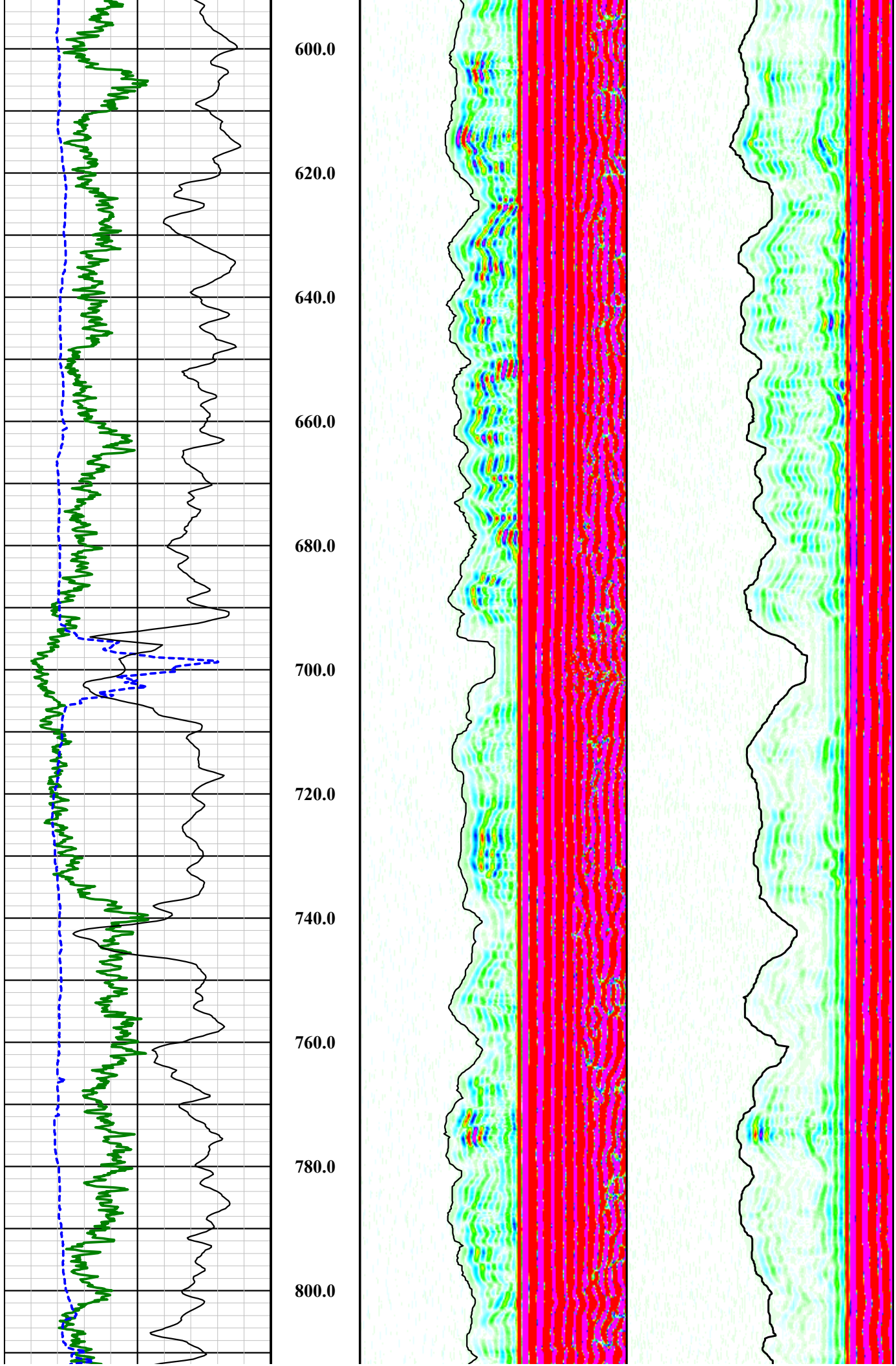
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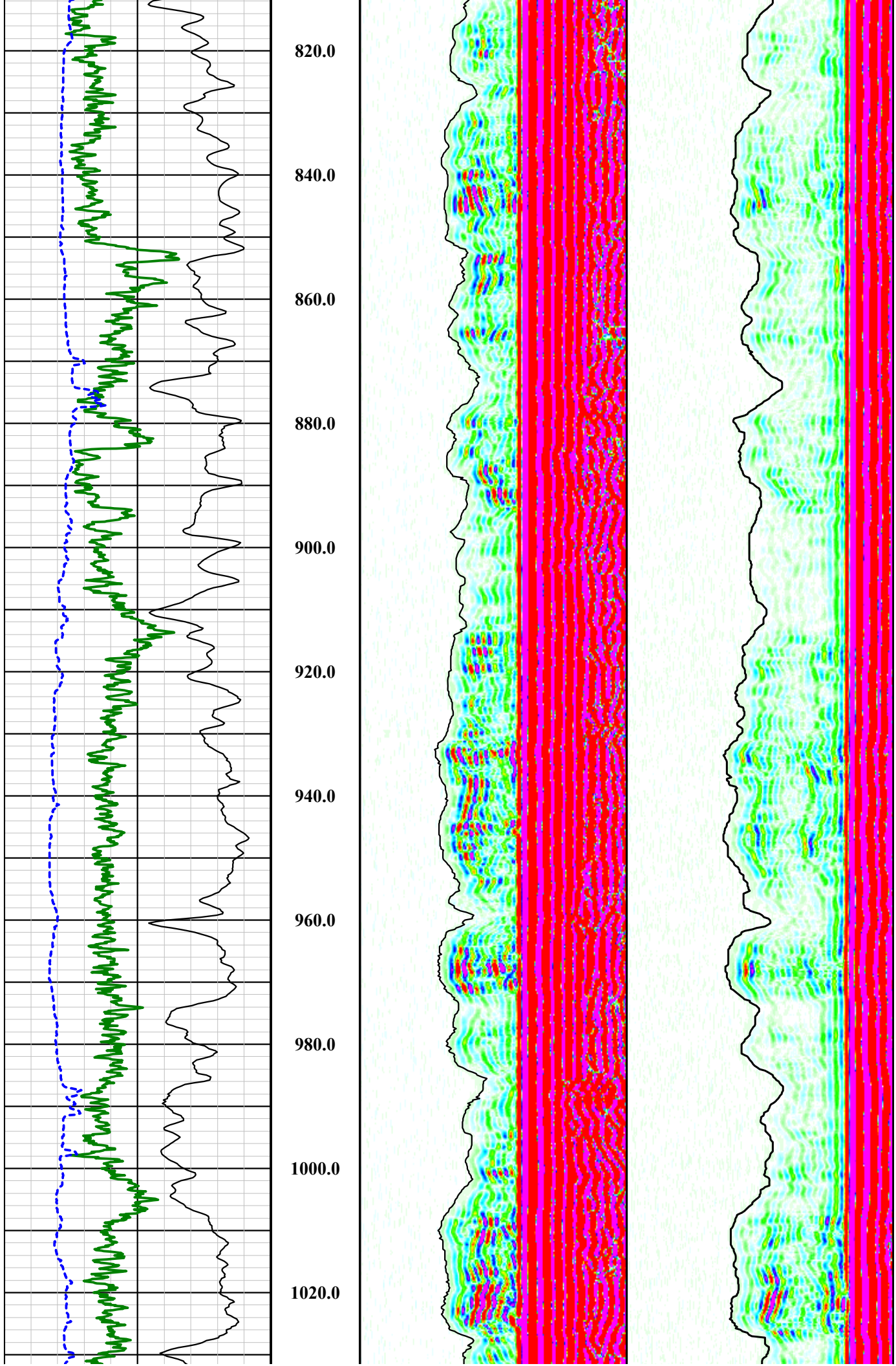
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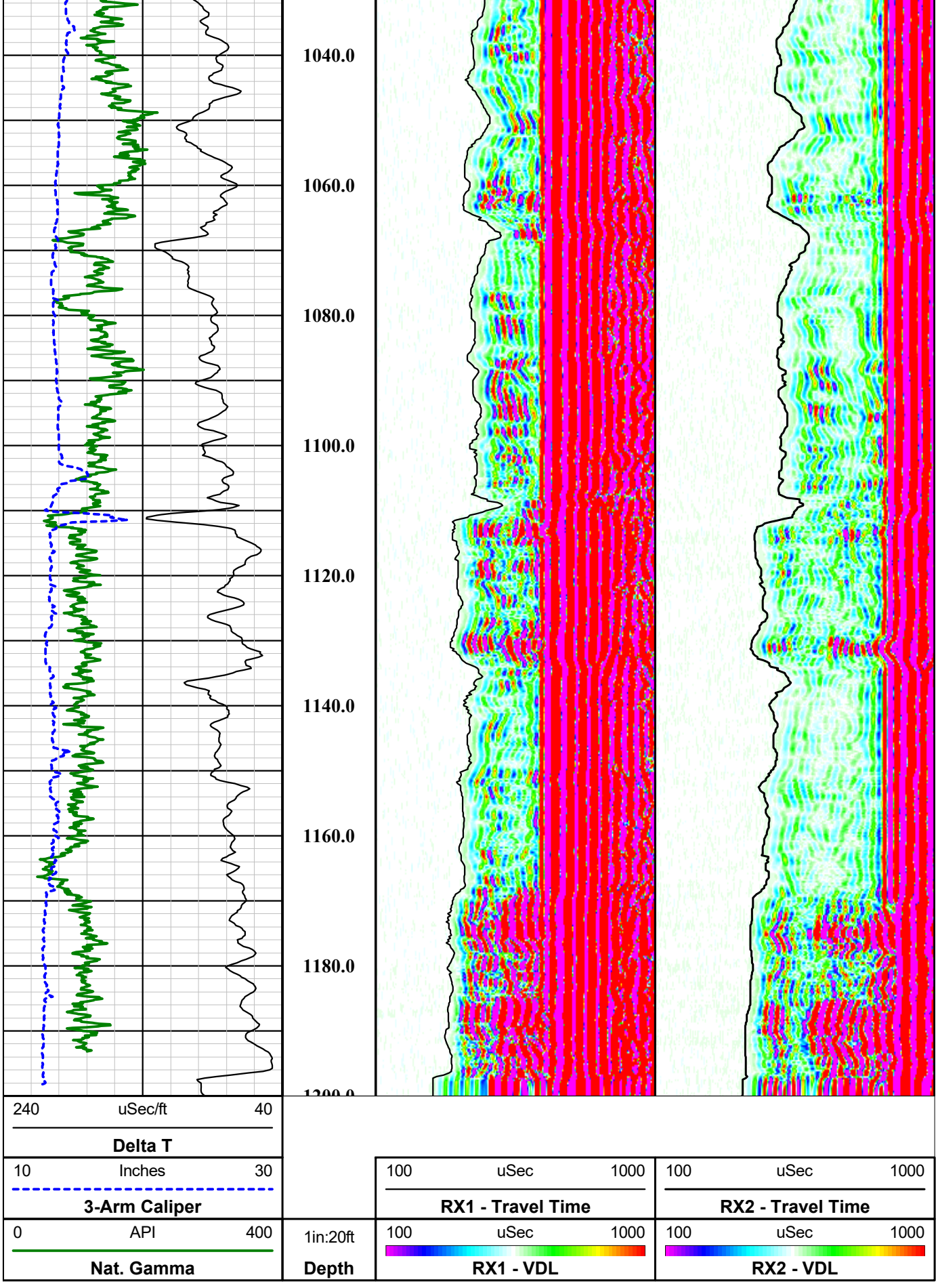


MSI 60 mm 2 RX Full Waveform Sonic Tool

Probe Top = Depth Ref.

Tool SN: 5001, 5050 & 6003

Four Conductor MSI Probe Top

Probe Length = 2.8 m or 9.19 ft
Probe Weight = ~26.5 kg or 58.4 lbs

Sensors: Ceramic Piezoelectric

Transmitter Frequency: 24 - 28 kHz resonant frequency

Rx - Rx Spacing: 0.3 m (12.0 in)

Typically centralized with external centralizers

Can only be collected in fluid

Temperature Rating: 80 Deg C (176 Deg F)
Presure Rating: 200 bar (2900 psi)

Rx-2 Tx - Rx2 Spacing = 1.22 m (48.0 in)

Rx-1 Tx - Rx1 Spacing = .91 m (36.0 in)

Acoustic Isolater

Tx = Acoustic Transmitter

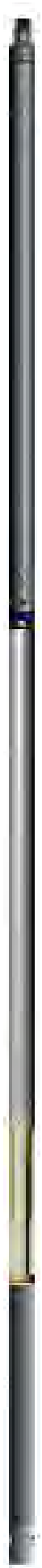
0.660 m or 26.0 in. - End of tool to center of Tx

2.36 in or 60 mm Diameter

QL40 Gamma-Caliper-Temperature-Fluid Conductivity

Probe Top = Depth Ref.

Tool SN: 5613, 5979, 6161 & 6292



Four Conductor MSI Probe Top

Probe Length = 3.69 m or 12.12 ft
Probe Weight = 18.195 kg or 40.11 lbs

Caliper arms can only collect data logging up hole

Fluid Temperature/Conductivity and Natural Gamma can be collected logging up and down hole

Temperature Rating: 80 Deg C (176 Deg F)
Presure Rating: 200 bar (2900 psi)

Natural Gamma Ray = 1.07 m (42.12 in)

3-Arm Caliper = 1.78 m (70.27 in)

Available Arm Sizes: 3", 9", and 15"

FTC (Fluid Temperature/Conductivity) = 0.78 m (30.71 in)

1.57" or 40.0 mm Diameter

1.57" or 40.0 mm Diameter

Southwest Exploration Services, LLC
borehole geophysics & video services

Company	FLORENCE COPPER
Well	WB-01
Field	FLORENCE COPPER
County	PINAL
State	ARIZONA

Final Sonic Summary

Southwest Exploration Services, LLC

borehole geophysics & video services

COMPANY	FLORENCE COPPER
WELL ID	WB-01
FIELD	FLORENCE COPPER
COUNTY	PINAL
STATE	ARIZONA

TYPE OF LOGS: CALIPER
MORE: W/ VOLUME CALC
LOCATION
SEC TWP RGE

OTHER SERVICES
SONIC
E-LOGS
DEVIATION
GAMMA
TEMP/FLUID COND.

PERMANENT DATUM	ELEVATION	K.B.
LOG MEAS. FROM	GROUND LEVEL ABOVE PERM. DATUM	D.F.
DRILLING MEAS. FROM	GROUND LEVEL	G.L.

DATE	3-30-18	TYPE FLUID IN HOLE	FORMATION WATER
RUN No	1	MUD WEIGHT	N/A
TYPE LOG	CALIPER W/ VOLUME CALC.	VISCOSITY	N/A
DEPTH-DRILLER	1203 FT.	LEVEL	FULL
DEPTH-LOGGER	1203 FT.	MAX. REC. TEMP.	28.11 DEG. C
BTM LOGGED INTERVAL	1203 FT.	IMAGE ORIENTED TO:	N/A
TOP LOGGED INTERVAL	SURFACE	SAMPLE INTERVAL	0.2 FT
DRILLER / RIG#	HYDRO RESOURCES	LOGGING TRUCK	TRUCK #750
RECORDED BY / Logging Eng.	E. TURNER	TOOL STRING/SN	QL COMBO TOOL SN 6292
WITNESSED BY	H&A	LOG TIME:ON SITE/OFF SITE	6:45 A.M.

RUN	BOREHOLE RECORD			CASING RECORD			
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	?	SURFACE	40 FT.	14"	STEEL	SURFACE	40 FT.
2	12 1/4"	40 FT.	TOTAL DEPTH				
3							

COMMENTS:

.

Tool Summary:

Date	3-30-18	**Date**	3-30-18	**Date**	3-30-18	**Date**		**Date**	
Run No.	1	**Run No.**	2	**Run No.**	3	**Run No.**	4	**Run No.**	5
Tool Model	QL DEV-GCFTC	**Tool Model**	MSI 60MM SONIC	**Tool Model**	GEOVISTA E-LOG	**Tool Model**		**Tool Model**	
Tool SN	163102	**Tool SN**	5050	**Tool SN**	7055	**Tool SN**		**Tool SN**	
From	SURFACE	**From**	SURFACE	**From**	SURFACE	**From**		**From**	
To	1203 FT.	**To**	1203 FT.	**To**	1203 FT.	**To**		**To**	
Recorded By	E. TURNER	**Recorded By**	E. TURNER	**Recorded By**	E. TURNER	**Recorded By**		**Recorded By**	
Truck No	750	**Truck No**	750	**Truck No**	750	**Truck No**		**Truck No**	
Operation Check	3-29-18	**Operation Check**	3-29-18	**Operation Check**	3-29-18	**Operation Check**		**Operation Check**	
Calibration Check	3-29-18	**Calibration Check**	N/A	**Calibration Check**	3-29-18	**Calibration Check**		**Calibration Check**	
Time Logged	07:35 AM	**Time Logged**	8:55 A.M.	**Time Logged**	10:00 A.M.	**Time Logged**		**Time Logged**	

Date	
Run No.	6
Tool Model	
Tool SN	
From	
To	
Recorded By	
Truck No	
Operation Check	
Calibration Check	
Time Logged	

Additional Comments:

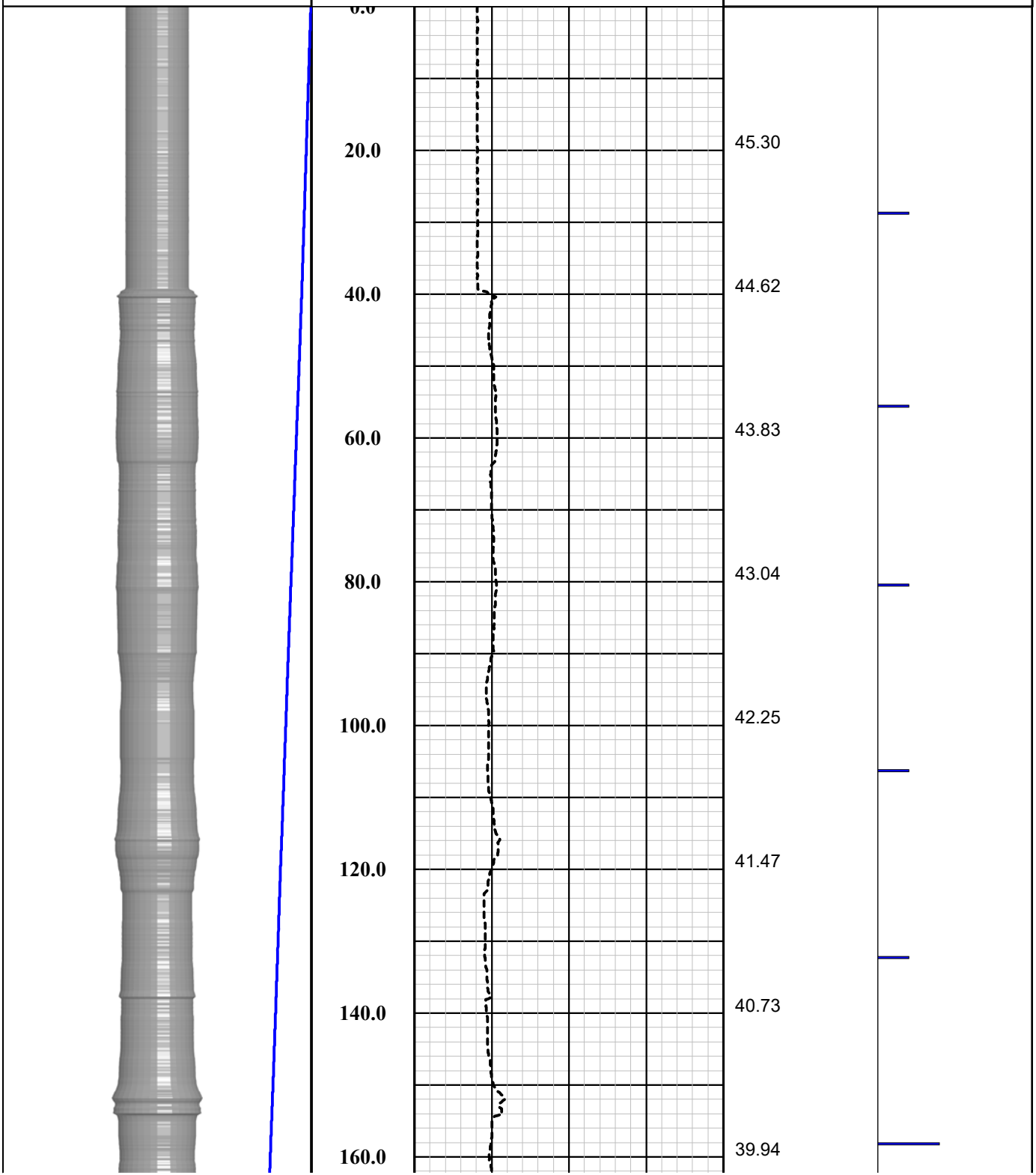
Caliper Arms Used: 15 IN. **Calibration Points:** 4 IN. & 24IN.

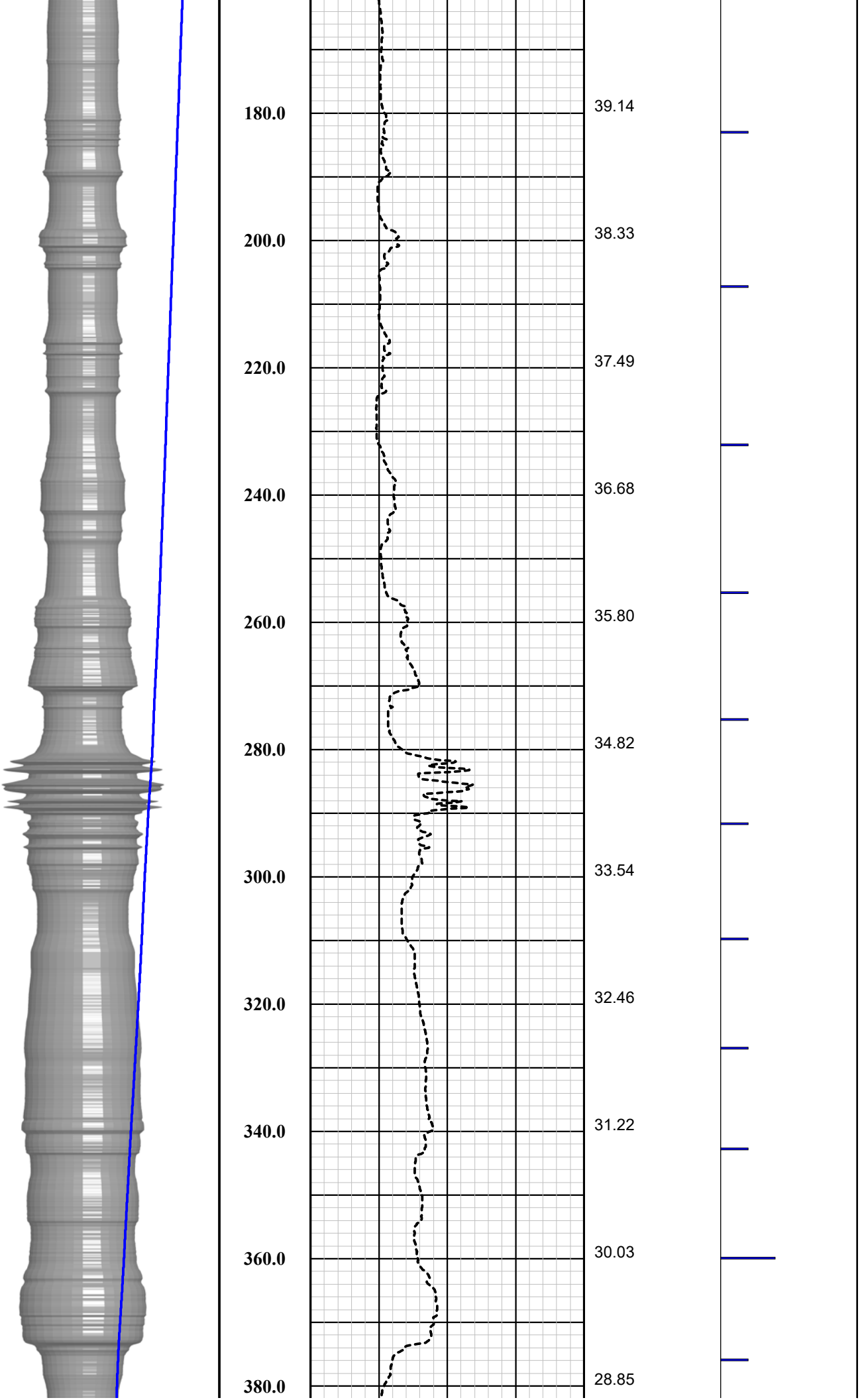
E-Log Calibration Range: 1 - 1000 OHM-M **Calibration Points:** 1 & 1000 OHM-M

Disclaimer:

All interpretations of log data are opinions based on inferences from electrical or other measurements. We do not guarantee the accuracy or correctness of any interpretations or recommendations and shall not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our employees or agents. These interpretations are also subject to our general terms and conditions set out in our current Service Invoice.

Total Volume	Depth	3-Arm Caliper	Cumulated Volume (cu.yd)
0 cu.yd 46.04	1in:20ft	10 Inches 30	
3-D View			Based on 5.5" OD Casing
360°			

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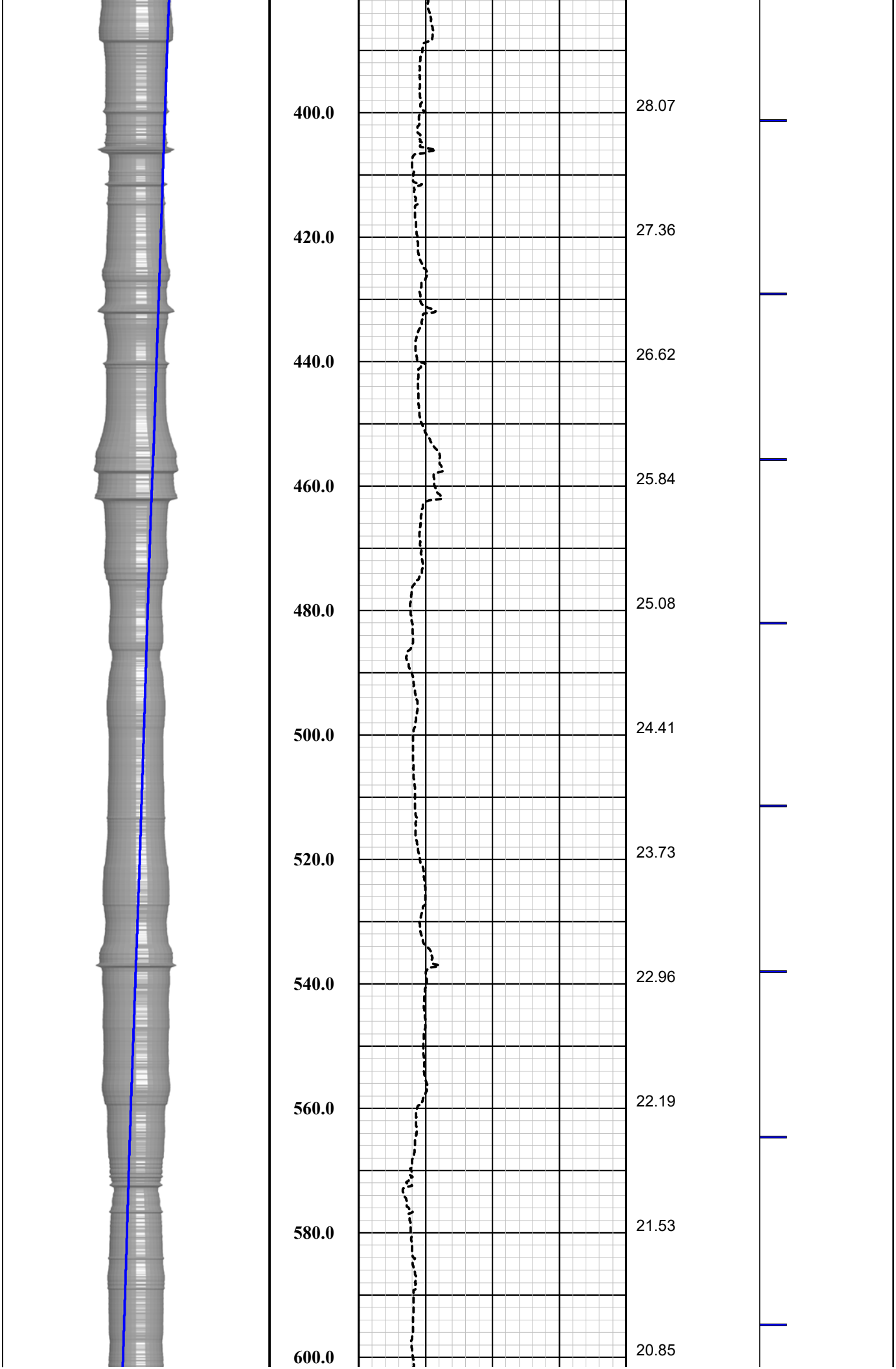
30.03
28.85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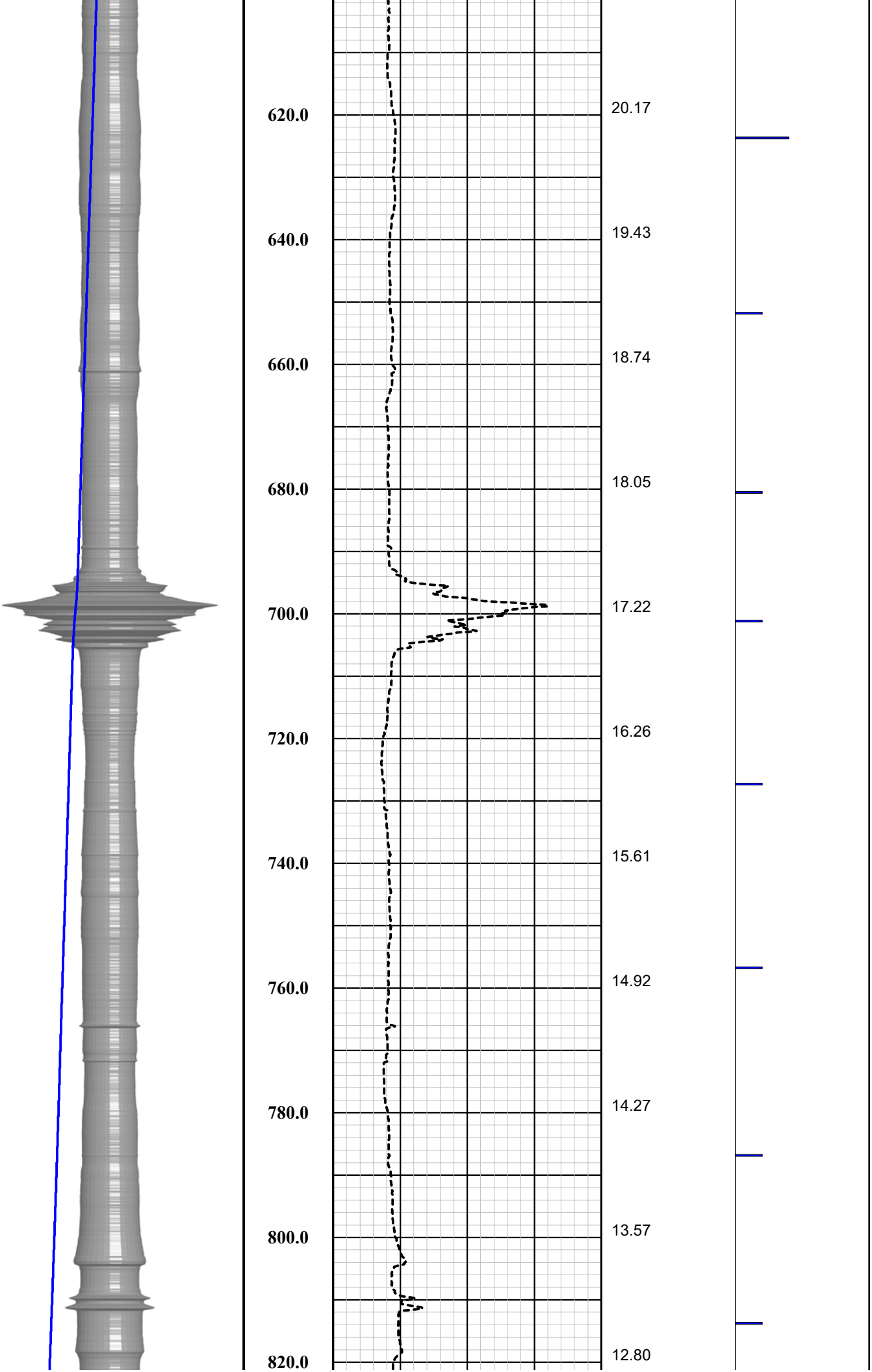
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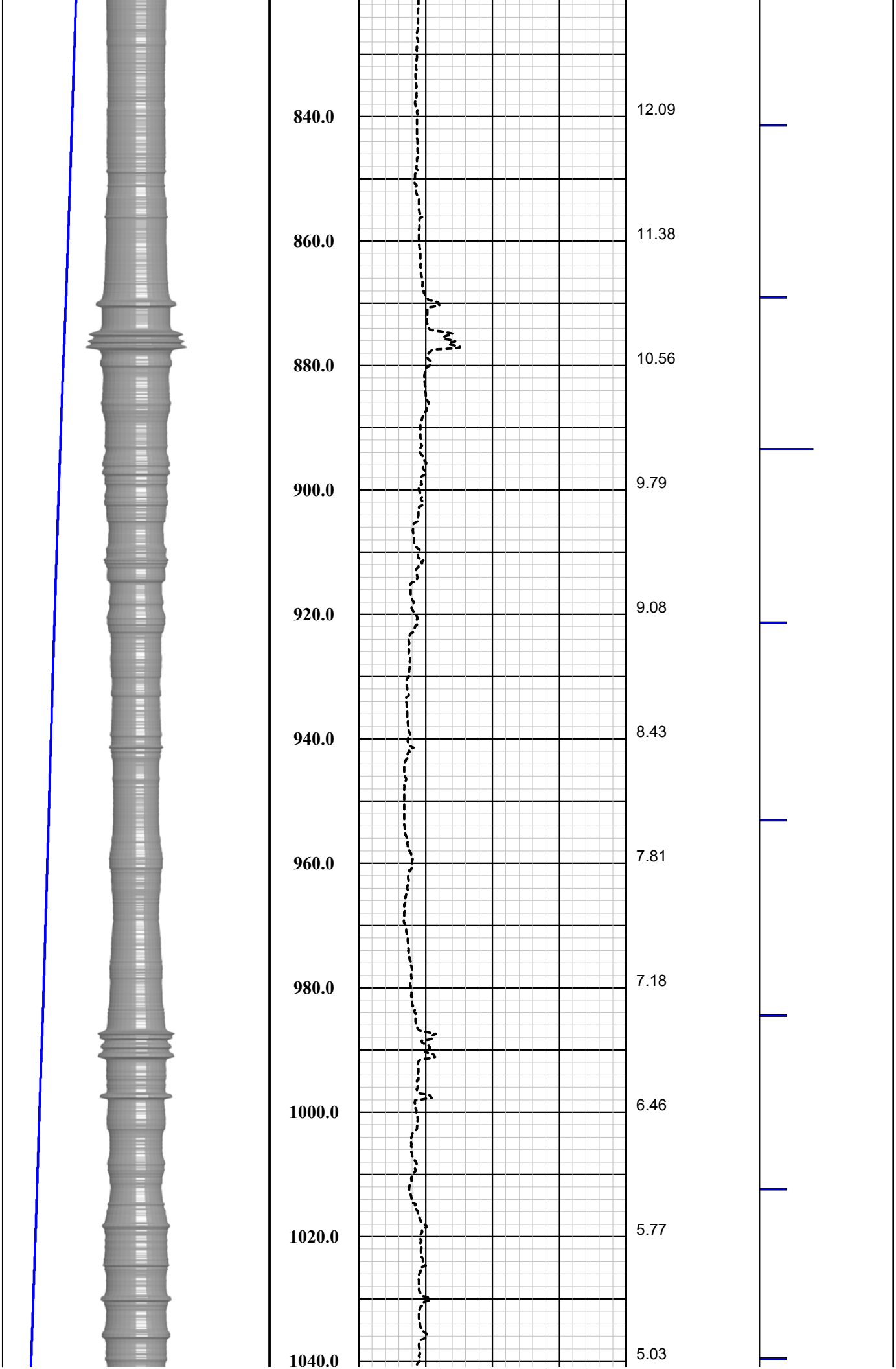
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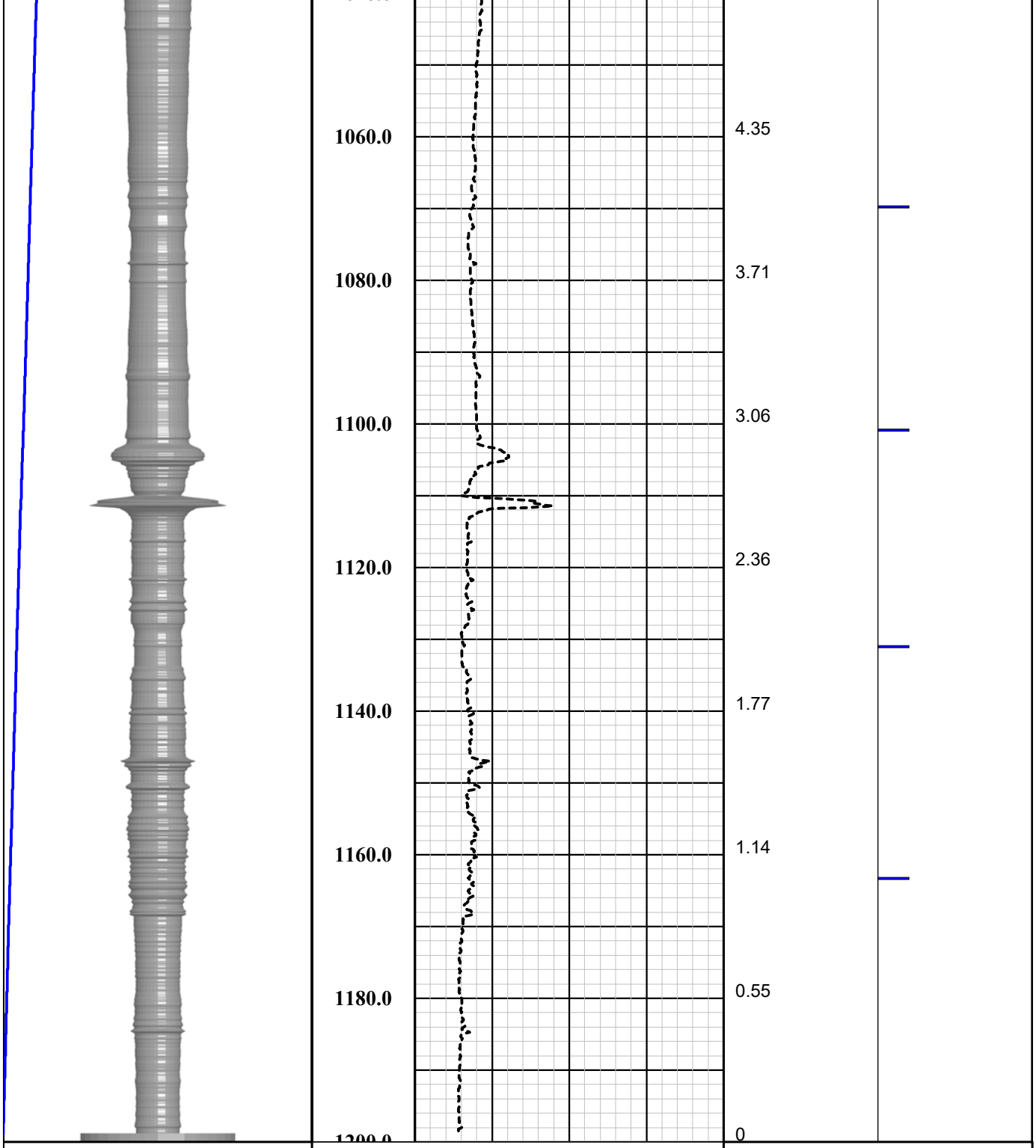
5.77
5.03



QL40 Gamma-Caliper-Temperature-Fluid Conductivity

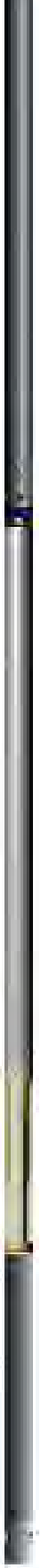
Probe Top = Depth Ref.

Tool SN: 5613, 5979, 6161 & 6292

Four Conductor MSI Probe Top

Probe Length = 3.69 m or 12.12 ft

Probe Weight = 18.195 kg or 40.11 lbs



Caliper arms can only collect data logging up hole

Fluid Temperature/Conductivity and Natural Gamma can be collected logging up and down hole

Temperature Rating: 80 Deg C (176 Deg F)
Presure Rating: 200 bar (2900 psi)

Natural Gamma Ray = 1.07 m (42.12 in)

3-Arm Caliper = 1.78 m (70.27 in)

Available Arm Sizes: 3", 9", and 15"

FTC (Fluid Temperature/Conductivity) = 0.78 m (30.71 in)

1.57" or 40.0 mm Diameter

Southwest Exploration Services, LLC
borehole geophysics & video services

Company	FLORENCE COPPER
Well	WB-01
Field	FLORENCE COPPER
County	PINAL
State	ARIZONA

Final **Caliper w/ Volume Calculation Summary**

Drift Report

Wellbore DRIFT Interpretation

PREPARED ESPECIALLY FOR

HYDRO RESOURCES and FLORENCE COPPER

WB-01

Friday - March 30, 2018

Southwest Exploration Services, LLC
borehole geophysics and video services

Southwest Exploration Services, LLC
(480) 926-4558

WELLBORE DRIFT INTERPRETATION

Southwest Exploration Services, LLC
(480) 926-4558

Company: HYDRO RESOURCES **Well Owner:** FLORENCE COPPER

County: PINAL **State:** Arizona **Country:** United States

Well Number: WB-01 **Survey Date:** Friday - March 30, 2018 **Magnetic Declination:** Declination Correction Not Used

Field: FLORENCE COPPER **Drift Calculation Methodology:** Balanced Tangential Method

Location:

Remarks:

Witness: H&A **Vehicle No.:** 750 **Invoice No.:** **Operator:** E. TURNER **Well Depth:** 1203 Feet **Casing size:** 14 Inches

Tool: Compass **Lat.:** **Long.:** **Sec.:** **Twp.:** **Rge.:**

MEASURED DATA			DATA COMPUTATIONS	
DEPTHS, feet	INCLINATIONS, degrees	AZIMUTHS, degrees	DRIFT DIST., feet	DRIFT BGR., degrees
0	0.23	201.07		
20	0.47	298.40	0.09' (1.08")	271.00
40	0.60	338.20	0.24' (2.88")	304.90
60	0.67	354.90	0.43' (5.16")	324.90
80	0.75	341.40	0.66' (7.92")	333.20
100	0.85	310.65	0.93' (11.16")	330.90
120	0.73	320.00	1.20' (14.40")	327.30
140	0.90	308.33	1.47' (17.64")	324.70
160	0.80	313.50	1.76' (21.12")	322.40
180	0.57	326.03	2.00' (24.00")	322.00
200	0.77	319.63	2.23' (26.76")	322.00
220	0.73	329.97	2.50' (30.00")	322.30
240	0.83	309.80	2.76' (33.12")	322.00
260	0.80	290.80	3.03' (36.36")	320.00
280	0.70	314.27	3.27' (39.24")	318.60
300	0.85	302.55	3.54' (42.48")	317.80
320	0.73	304.40	3.80' (45.60")	316.80
340	0.63	294.43	4.03' (48.36")	315.80

True Vertical Depth: 1188.42' **Final Drift Distance:** 4.77' (57.24") **Final Drift Bearing:** 275.40°

Note: Magnetic Declination is not used because it is not a factor in the calculation of well drift or alignment. Magnetic Declination is only important if attempting to hit a target or miss another well and then it is included in the calculations.

WELLBORE DRIFT INTERPRETATION

Southwest Exploration Services, LLC

WB-01

(480) 926-4558

MEASURED DATA			DATA COMPUTATIONS	
DEPTHS, feet	INCLINATIONS, degrees	AZIMUTHS, degrees	DRIFT DIST., feet	DRIFT BRG., degrees
360	0.53°	283.43°	4.21' (50.52")	314.60
380	0.40°	280.87°	4.35' (52.20")	313.40
400	0.53°	162.93°	4.33' (51.96")	312.30
420	0.40°	221.97°	4.25' (51.00")	310.80
440	0.33°	284.87°	4.31' (51.72")	309.50
460	0.40°	269.40°	4.41' (52.92")	308.60
480	0.30°	197.10°	4.45' (53.40")	307.40
500	0.27°	210.00°	4.42' (53.04")	306.20
520	0.33°	189.67°	4.39' (52.68")	304.90
540	0.43°	268.93°	4.43' (53.16")	303.60
560	0.73°	280.90°	4.61' (55.32")	302.50
580	0.73°	302.70°	4.86' (58.32")	301.90
600	0.57°	282.40°	5.08' (60.96")	301.60
620	0.40°	283.13°	5.24' (62.88")	301.00
640	0.30°	274.70°	5.35' (64.20")	300.50
660	0.33°	196.47°	5.38' (64.56")	299.70
680	0.30°	299.57°	5.42' (65.04")	299.10
700	0.17°	225.40°	5.49' (65.88")	298.80
720	0.27°	227.37°	5.51' (66.12")	298.00
740	0.30°	140.83°	5.48' (65.76")	297.30
760	0.23°	218.20°	5.44' (65.28")	296.70
780	0.43°	063.80°	5.40' (64.80")	296.90
800	0.80°	279.07°	5.49' (65.88")	297.10
820	0.15°	126.05°	5.60' (67.20")	296.60
840	0.47°	109.50°	5.49' (65.88")	296.70
860	0.40°	179.23°	5.38' (64.56")	296.10
880	0.70°	152.50°	5.25' (63.00")	294.70
900	0.47°	230.00°	5.19' (62.28")	293.00
920	0.37°	051.67°	5.20' (62.40")	292.80
940	0.30°	099.83°	5.11' (61.32")	293.60
960	0.53°	077.47°	4.99' (59.88")	294.40
980	0.50°	053.67°	4.87' (58.44")	295.90
1,000	0.30°	254.70°	4.87' (58.44")	296.40

True Vertical Depth: 1188.42' **Final Drift Distance: 4.77' (57.24")** **Final Drift Bearing: 275.40°**

WELLBORE DRIFT INTERPRETATION

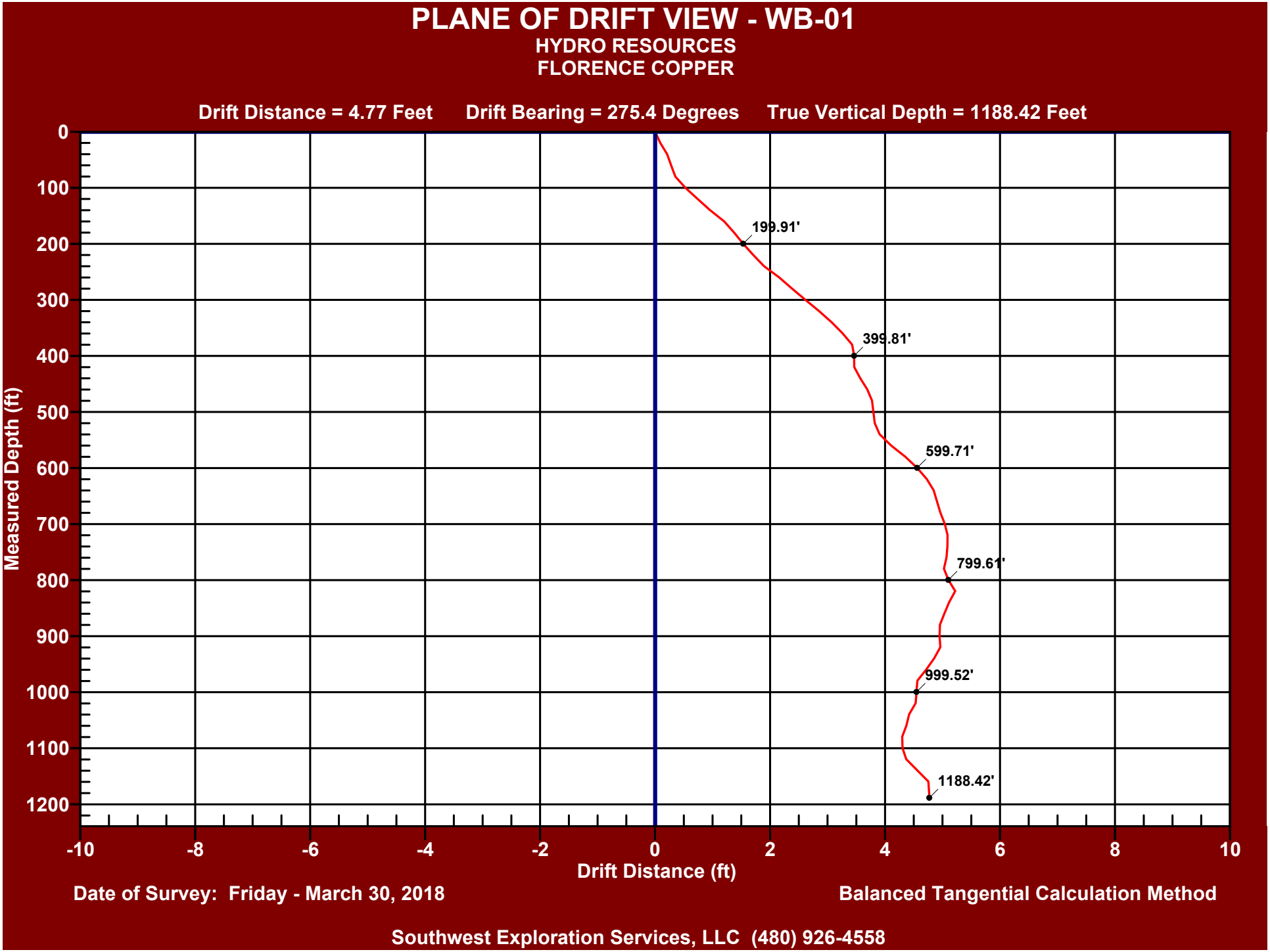
Southwest Exploration Services, LLC

WB-01

(480) 926-4558

MEASURED DATA			DATA COMPUTATIONS	
DEPTHS, feet	INCLINATIONS, degrees	AZIMUTHS, degrees	DRIFT DIST., feet	DRIFT BRG., degrees
1,020	0.50°	137.40°	4.83' (57.96")	295.60
1,040	0.33°	135.07°	4.69' (56.28")	295.00
1,060	0.47°	179.03°	4.61' (55.32")	293.90
1,080	0.57°	148.13°	4.49' (53.88")	292.20
1,100	0.80°	212.20°	4.44' (53.28")	289.60
1,120	0.67°	188.83°	4.45' (53.40")	286.40
1,140	1.33°	236.20°	4.60' (55.20")	282.70
1,160	0.30°	199.70°	4.77' (57.24")	280.10
1,180	1.10°	185.47°	4.77' (57.24")	277.20
1,189	0.73°	187.93°	4.77' (57.24")	275.40

True Vertical Depth: 1188.42' **Final Drift Distance: 4.77' (57.24")** **Final Drift Bearing: 275.40°**

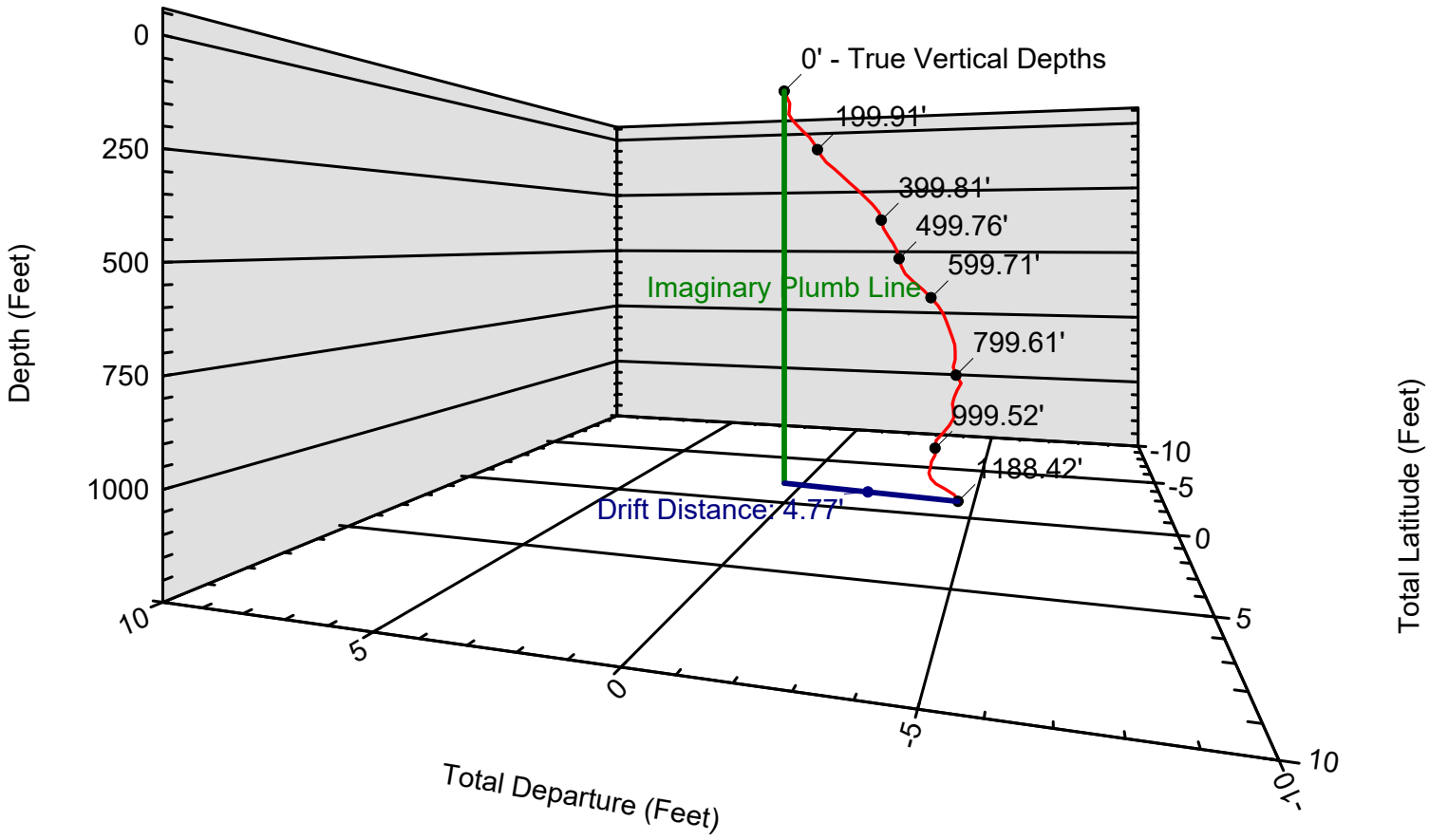

PLANE OF DRIFT VIEW - WB-01
HYDRO RESOURCES
FLORENCE COPPER
Drift Distance = 4.77 Feet
Drift Bearing = 275.4 Degrees
True Vertical Depth = 1188.42 Feet
Measured Depth (ft)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
199.91'
399.81'
599.71'
799.61'
999.52'
1188.42'
-10
-8
-6
-4
-2
0
2
4
6
8
10
Drift Distance (ft)
Date of Survey: Friday - March 30, 2018
Balanced Tangential Calculation Method
Southwest Exploration Services, LLC (480) 926-4558

3D PROJECTION VIEW - WB-01

HYDRO RESOURCES
FLORENCE COPPER

Drift Distance = 4.77 Feet **Drift Bearing = 275.4 Degrees** **True Vertical Depth = 1188.42 Feet**

16.0



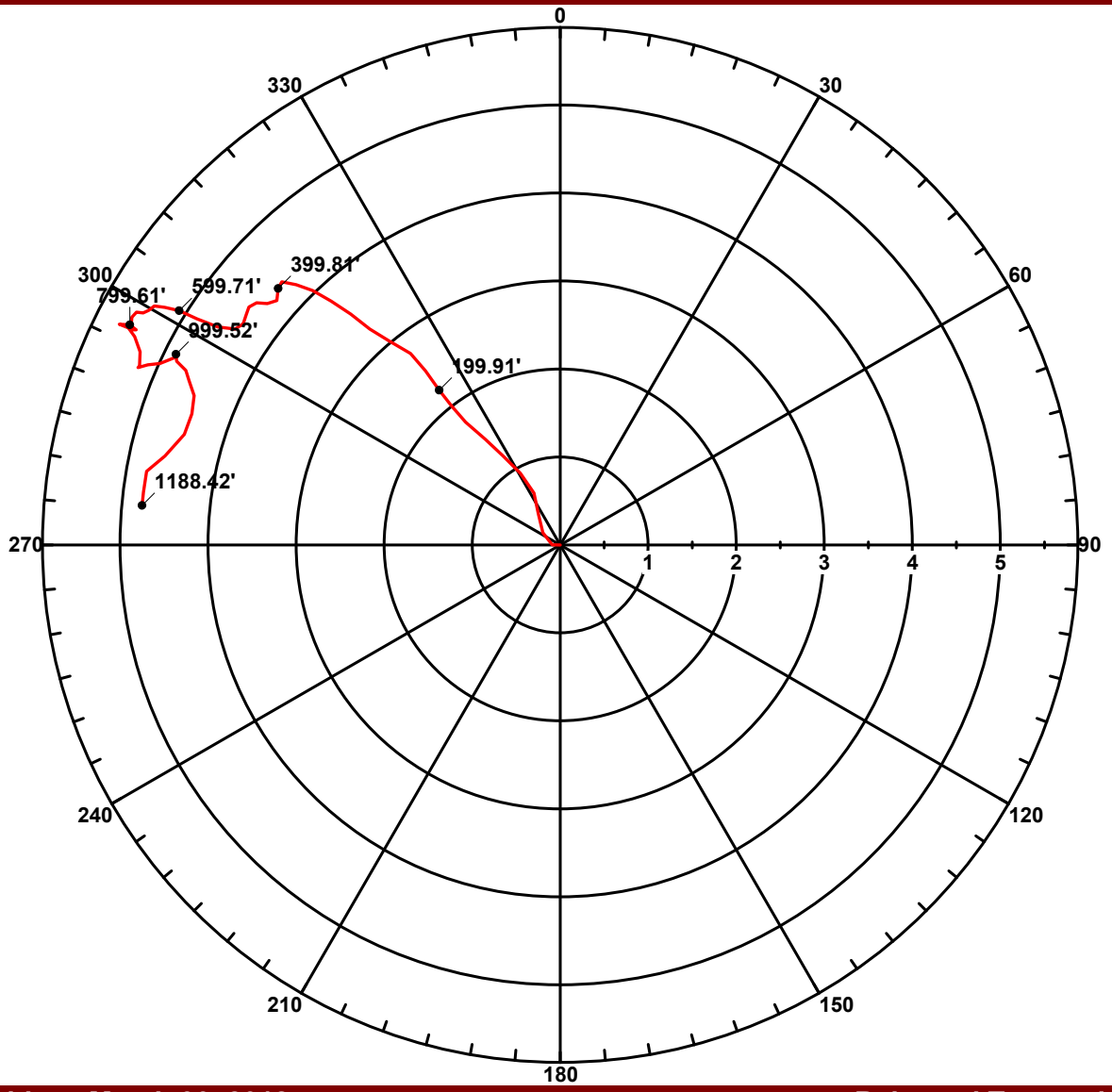
Date of Survey: Friday - March 30, 2018 **Balanced Tangential Calculation Method**

Southwest Exploration Services, LLC (480) 926-4558

POLAR VIEW - WB-01

HYDRO RESOURCES
FLORENCE COPPER

Drift Distance = 4.77 Feet Drift Bearing = 275.4 Degrees True Vertical Depth = 1188.42 Feet



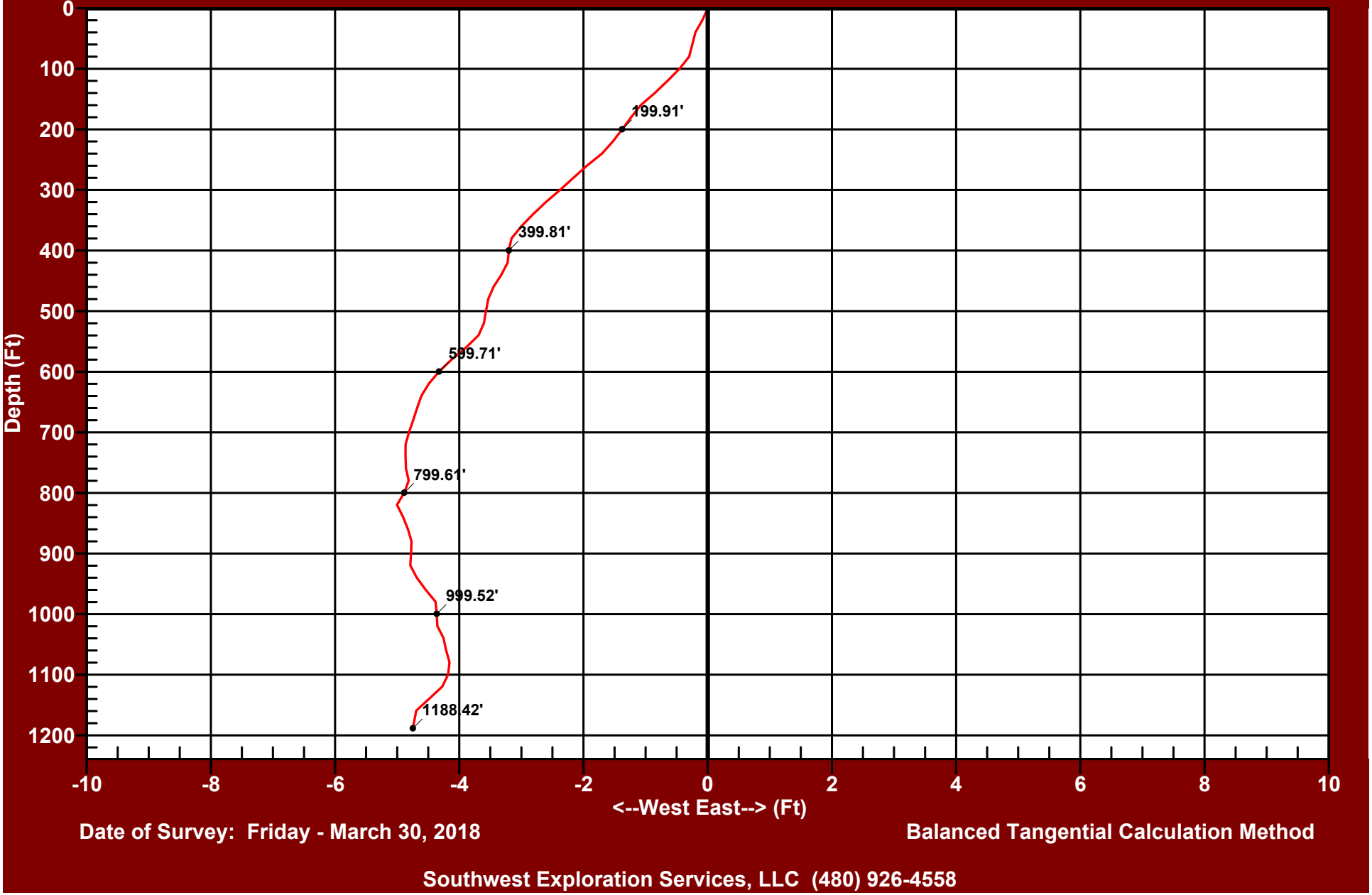
Date of Survey: Friday - March 30, 2018 **Balanced Tangential Calculation Method**

Southwest Exploration Services, LLC (480) 926-4558

EASTING RECTANGULAR VIEW - WB-01

HYDRO RESOURCES
FLORENCE COPPER

Drift Distance = 4.77 Feet Drift Bearing = 275.4 Degrees True Vertical Depth = 1188.42 Feet



Date of Survey: Friday - March 30, 2018

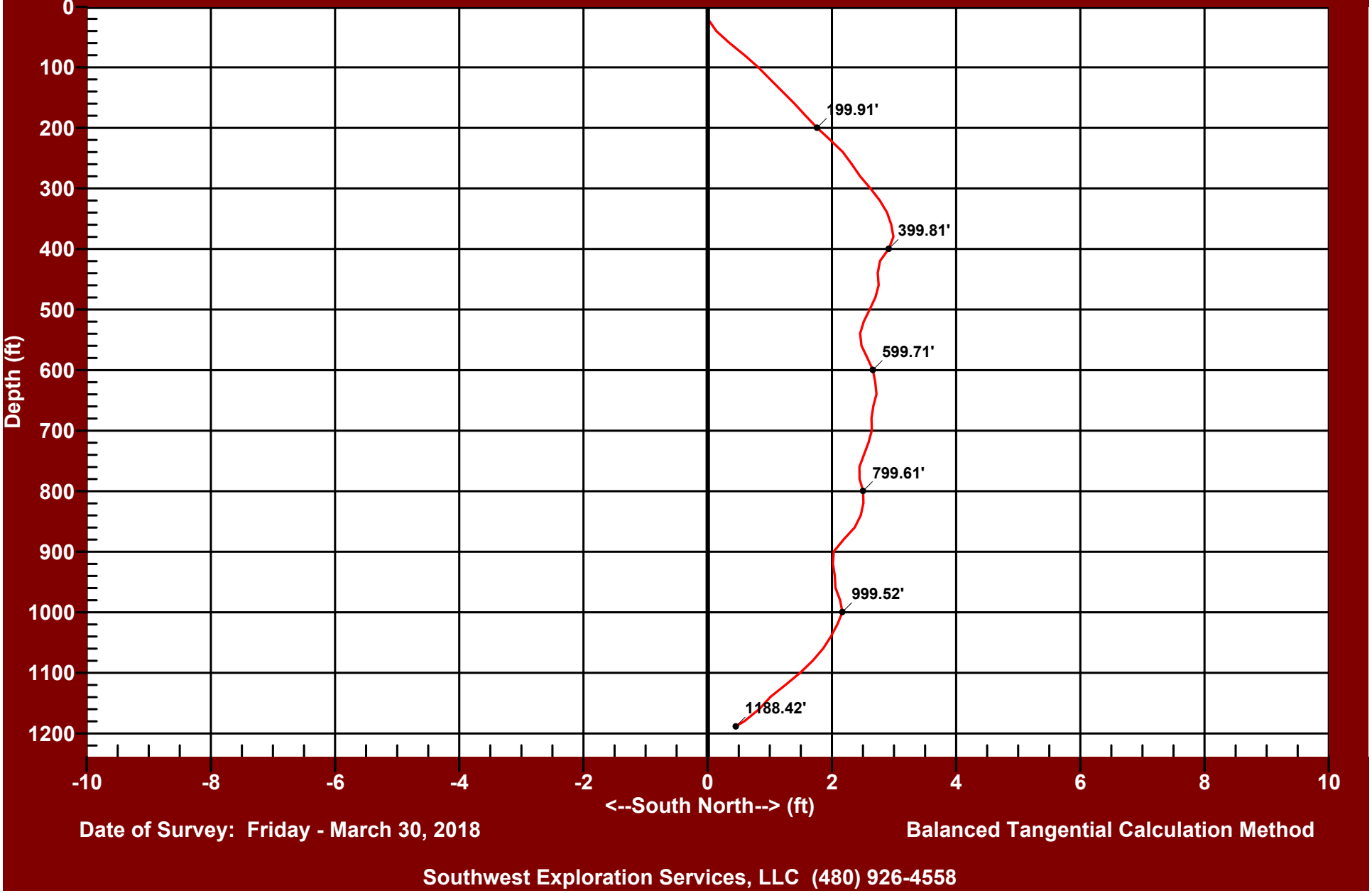
Balanced Tangential Calculation Method

Southwest Exploration Services, LLC (480) 926-4558

NORTHING RECTANGULAR VIEW - WB-01

HYDRO RESOURCES
FLORENCE COPPER

Drift Distance = 4.77 Feet Drift Bearing = 275.4 Degrees True Vertical Depth = 1188.42 Feet



Date of Survey: Friday - March 30, 2018

Balanced Tangential Calculation Method

Southwest Exploration Services, LLC (480) 926-4558

Southwest Exploration Services, LLC

borehole geophysics & video services

COMPANY	FLORENCE COPPER				
WELL ID	WB-01				
FIELD	FLORENCE COPPER				
COUNTY	PINAL			STATE	ARIZONA
TYPE OF LOGS: GAMMA - CALIPER					OTHER SERVICES
MORE: TEMP - FLUID COND.					SONIC
					4 PI DENSITY
					DUAL DENSITY
LOCATION					VIDEO
SEC	TWP	RGE			
PERMANENT DATUM		ELEVATION		K.B.	
LOG MEAS. FROM	GROUND LEVEL	ABOVE PERM. DATUM		D.F.	
DRILLING MEAS. FROM	GROUND LEVEL			G.L.	

DATE	4-13-18	TYPE FLUID IN HOLE	FORMATION WATER
RUN No	1	MUD WEIGHT	N/A
TYPE LOG	GAMMA - CALIPER - FTC	VISCOSITY	N/A
DEPTH-DRILLER	1200 FT	LEVEL	~ 232 FT
DEPTH-LOGGER	1174 FT	MAX. REC. TEMP.	37.08 Deg C
BTM LOGGED INTERVAL	1174 FT	IMAGE ORIENTED TO:	N/A
TOP LOGGED INTERVAL	SURFACE	SAMPLE INTERVAL	0.2 FT
DRILLER / RIG#	HYDRO RESOURCES	LOGGING TRUCK	TRUCK #750
RECORDED BY / Logging Eng.	M. QUINONES / A. OLSON	TOOL STRING/SN	QL COMBO TOOL SN 6292
WITNESSED BY	SCOTT - H&A	LOG TIME:ON SITE/OFF SITE	8:00 AM

RUN	BOREHOLE RECORD		CASING RECORD			
NO.	BIT	FROM	TO	SIZE	WGT.	FROM	TO
1	?	SURFACE	40 FT	14"	STEEL	SURFACE	500 FT
2	20"	40 FT	500 FT	4"	FG	SURFACE	500 FT
3	12 1/4"	500 FT	TOTAL DEPTH	4"	PVC	500 FT	TOTAL DEPTH

COMMENTS:

.

Tool Summary:

Date	4-13-18	**Date**	4-13-18	**Date**	4-13-18
Run No.	1	**Run No.**	2	**Run No.**	3
Tool Model	ARIES CAMERA	**Tool Model**	QL COMBO TOOL	**Tool Model**	ALT 4 RX SONIC
Tool SN	BT9700	**Tool SN**	6292	**Tool SN**	4572
From	SURFACE	**From**	SURFACE	**From**	200 FT
To	1171 FT	**To**	1174 FT	**To**	1174 FT
Recorded By	M. QUINONES	**Recorded By**	M. QUINONES	**Recorded By**	M. QUINONES
Truck No	750	**Truck No**	750	**Truck No**	750
Operation Check	4-13-18	**Operation Check**	4-13-18	**Operation Check**	4-13-18
Calibration Check	N/A	**Calibration Check**	4-13-18	**Calibration Check**	N/A
Time Logged	8:00 AM	**Time Logged**	10:05 AM	**Time Logged**	10:46 AM

Date	4-13-18	**Date**	4-13-18	**Date**	
Run No.	4	**Run No.**	5	**Run No.**	6
Tool Model	COMPROBE 4 PI	**Tool Model**	ALT QL DESNITY	**Tool Model**	
Tool SN	6009	**Tool SN**	6187	**Tool SN**	
From	SURFACE	**From**	SURFACE	**From**	
To	1174 FT	**To**	1174 FT	**To**	
Recorded By	M. QUINONES	**Recorded By**	M. QUINONES	**Recorded By**	
Truck No	750	**Truck No**	750	**Truck No**	
Operation Check	4-13-18	**Operation Check**	4-13-18	**Operation Check**	
Calibration Check	4-13-18	**Calibration Check**	4-13-18	**Calibration Check**	
Time Logged	11:25 AM	**Time Logged**	12:05 PM	**Time Logged**	

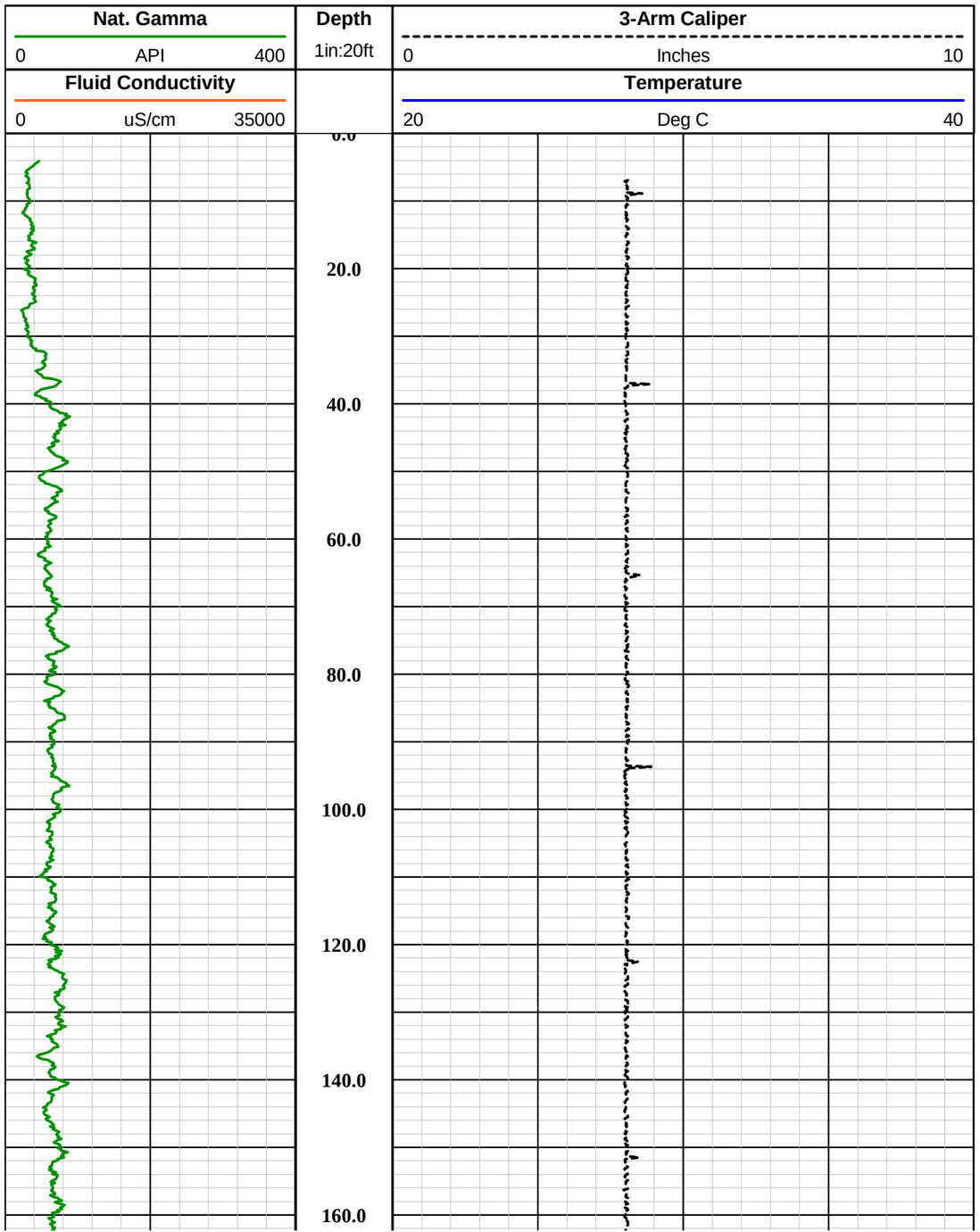
Additional Comments:

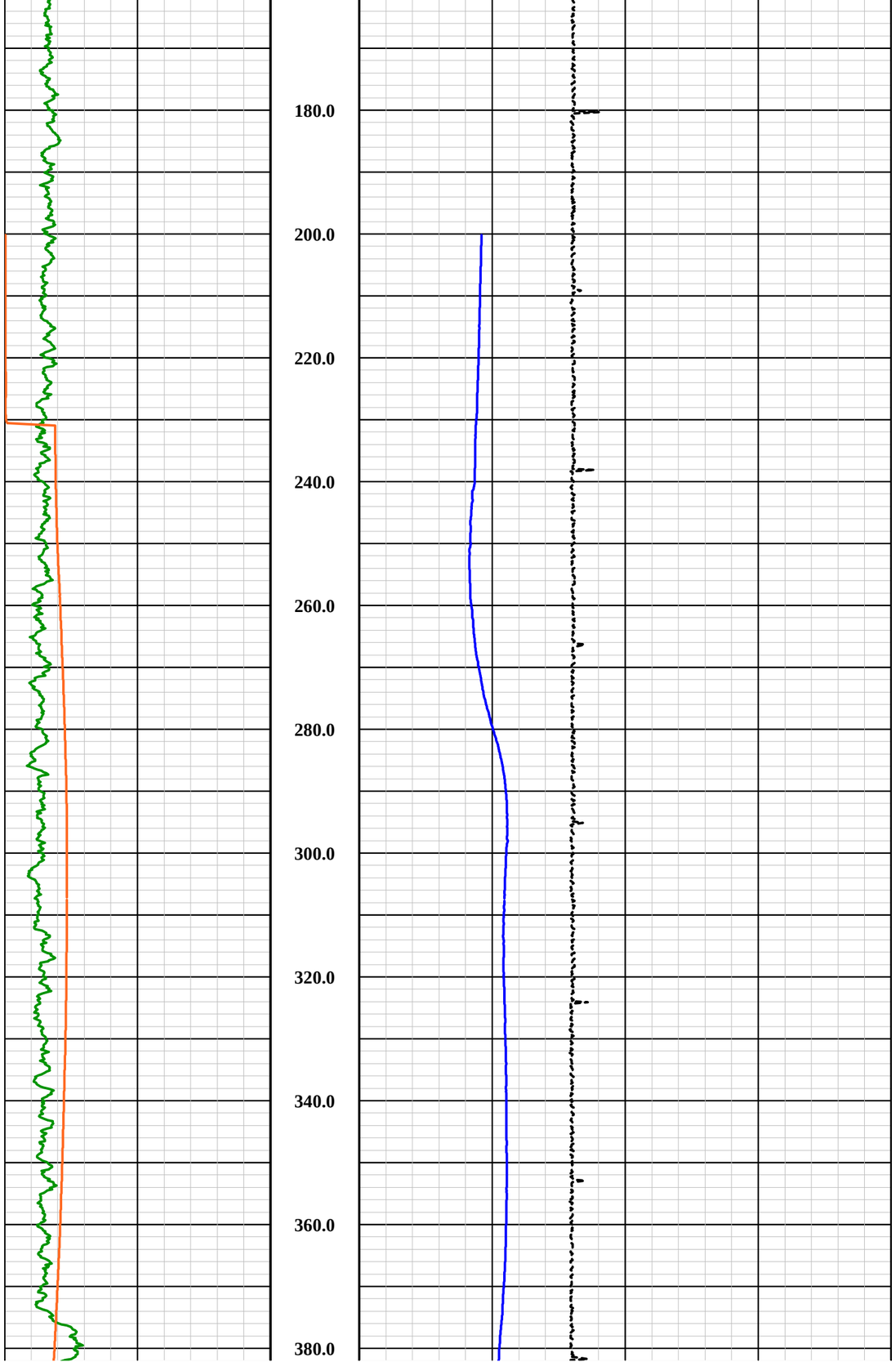
Caliper Arms Used: 9" **Calibration Points:** 4" & 12"

E-Log Calibration Range: N/A **Calibration Points:** N/A

Disclaimer:

All interpretations of log data are opinions based on inferences from electrical or other measurements. We do not guarantee the accuracy or correctness of any interpretations or recommendations and shall not be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our employees or agents. These interpretations are also subject to our general terms and conditions set out in our current Service Invoice.

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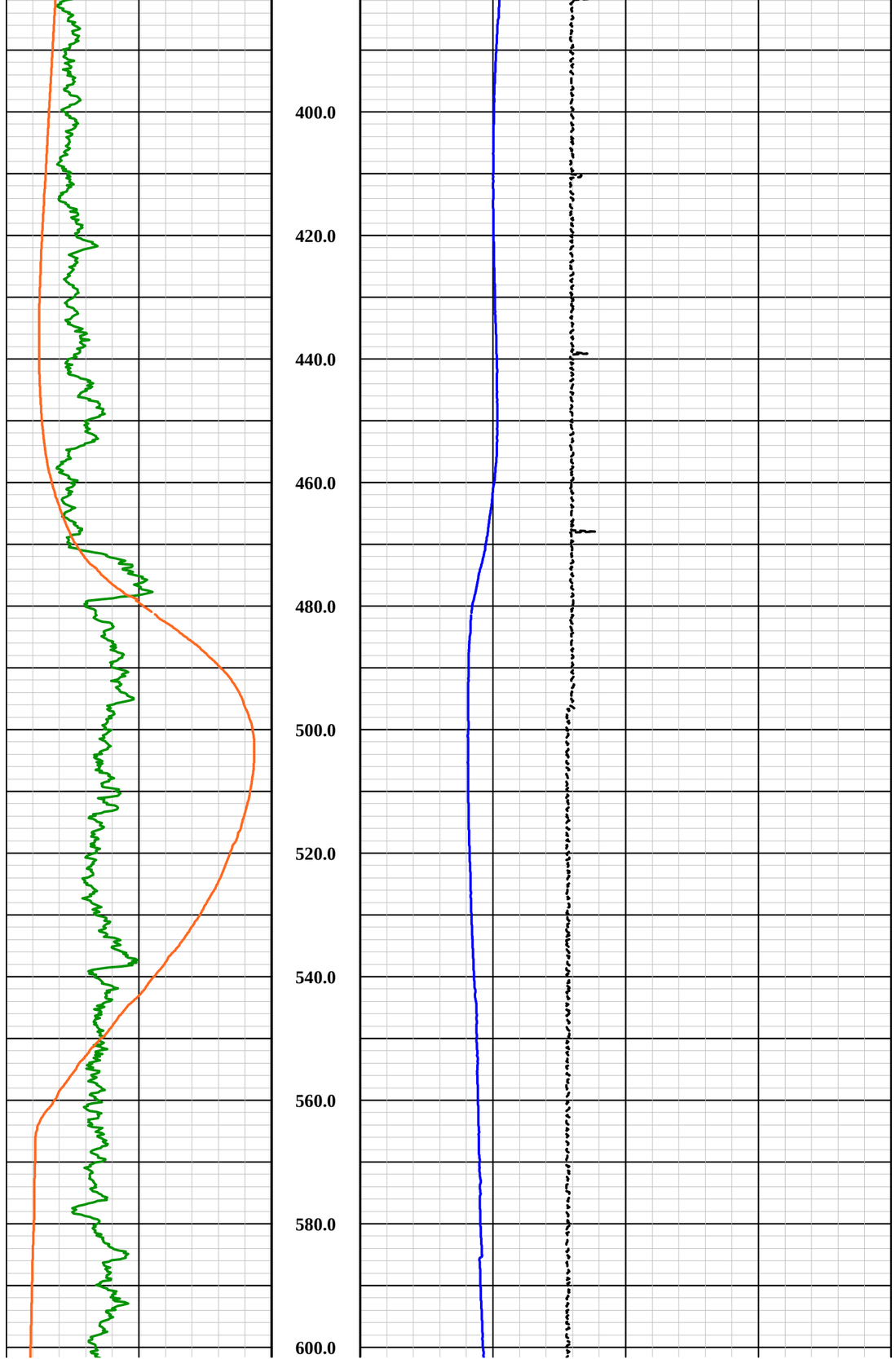
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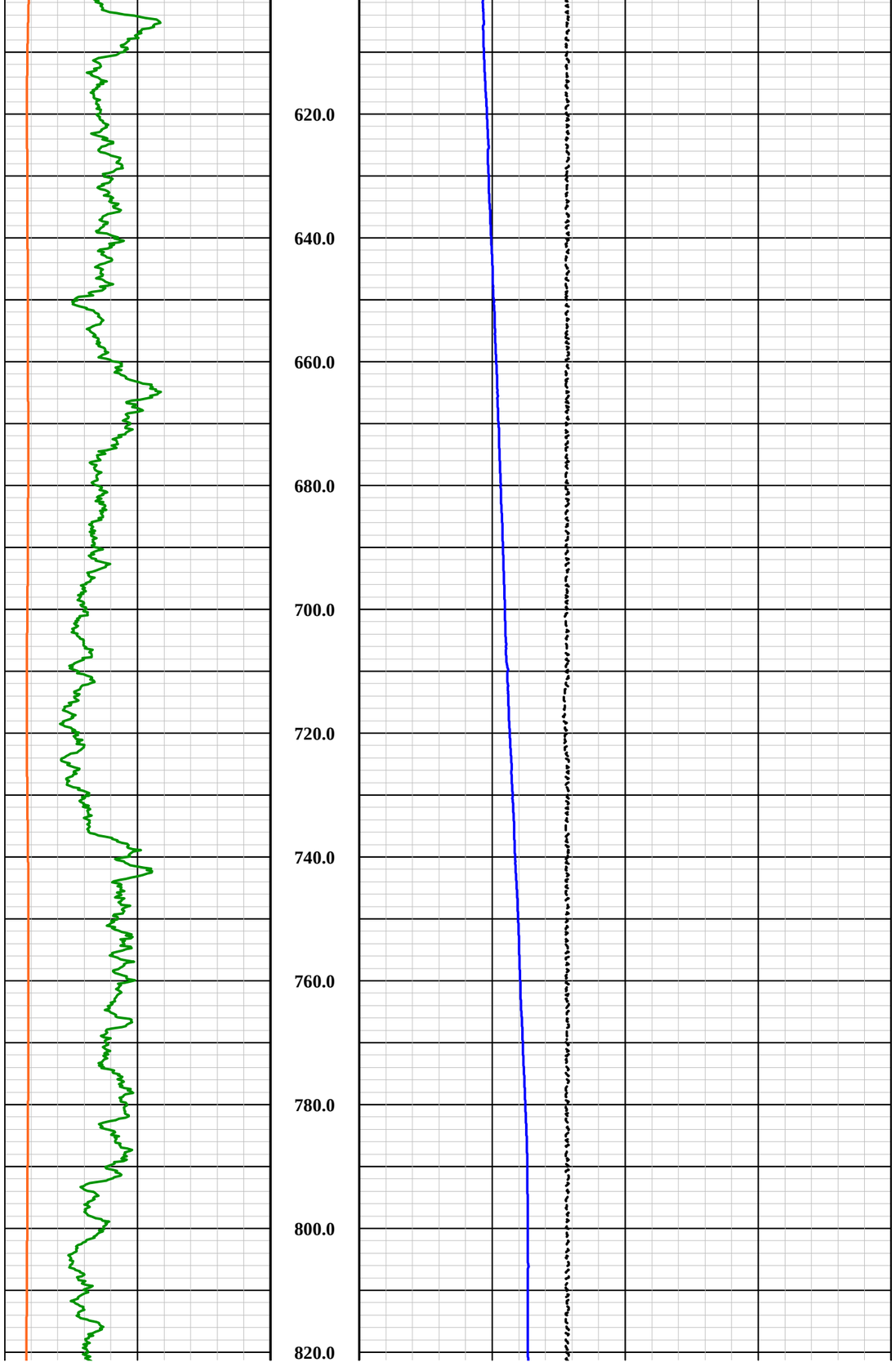
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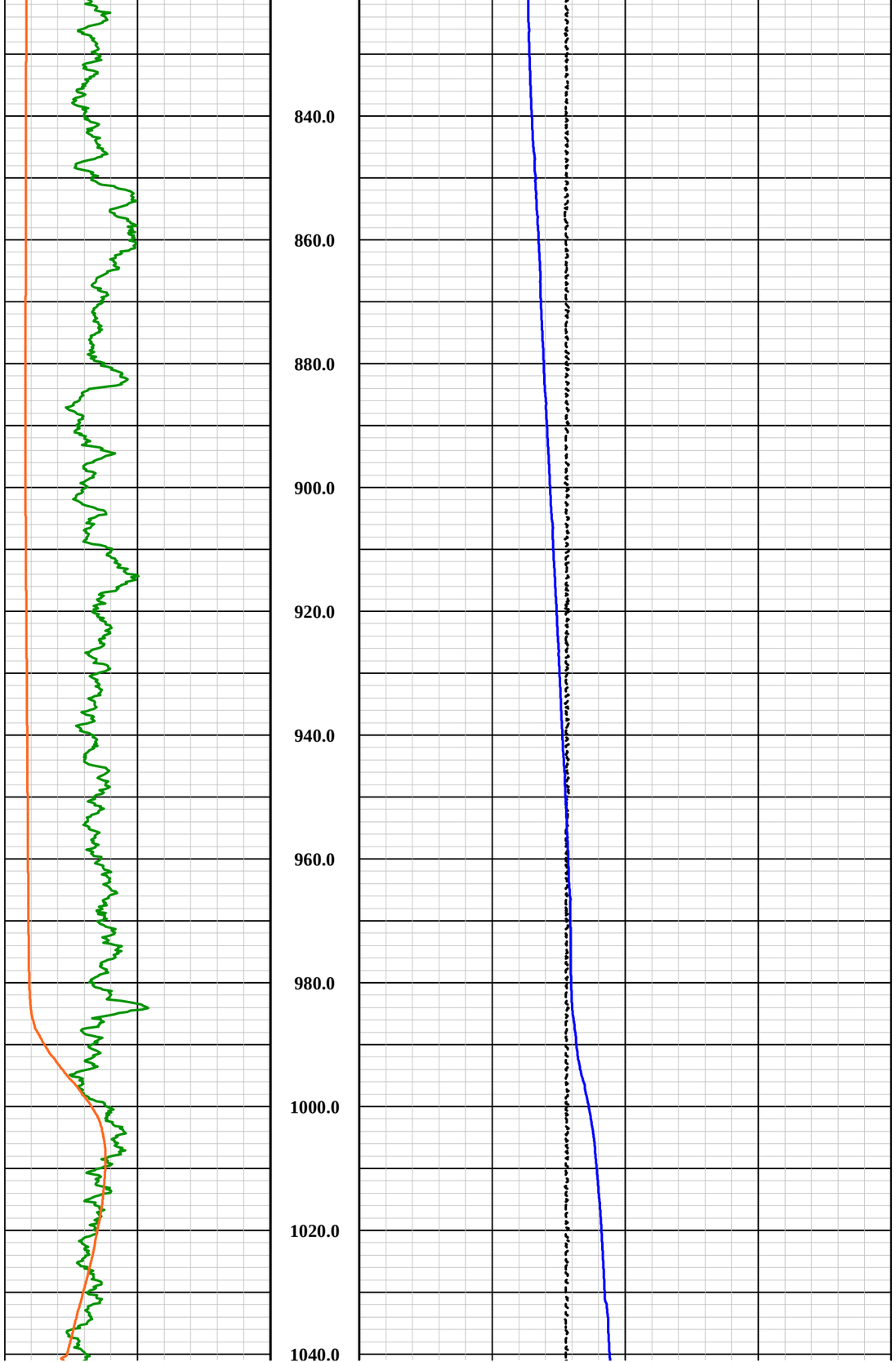
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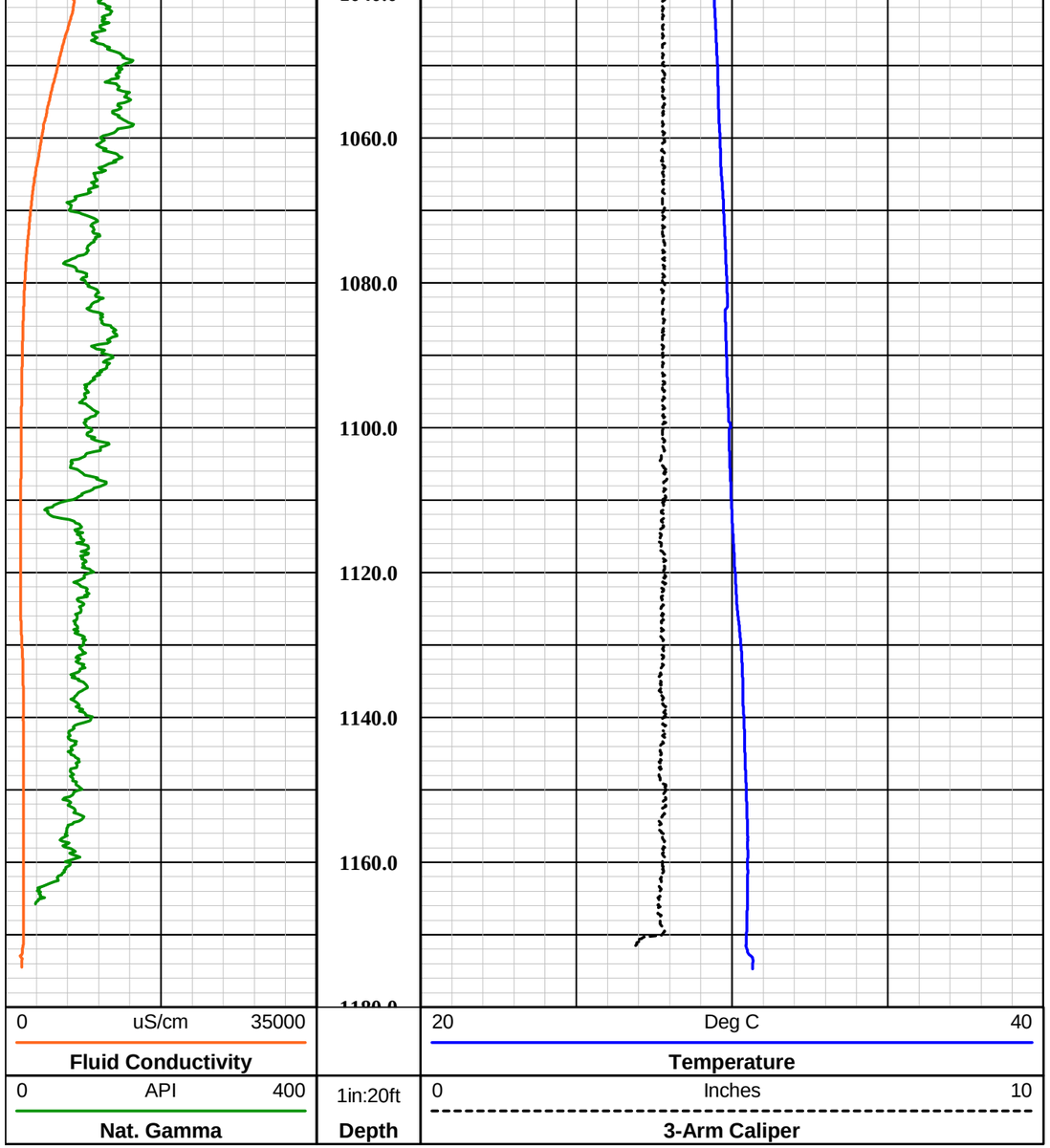

QL40 Gamma-Caliper-Temperature-Fluid Conductivity

Probe Top = Depth Ref.

Tool SN: 5613, 5979, 6161 & 6292

Four Conductor MSI Probe Top

Probe Length = 3.69 m or 12.12 ft
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Fluid Temperature/Conductivity and Natural Gamma

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Available Arm Sizes: 3", 9", and 15"

FTC (Fluid Temperature/Conductivity) = 0.78 m (30.71 in)

1.57" or 40.0 mm Diameter

Southwest Exploration Services, LLC
borehole geophysics & video services

Company	FLORENCE COPPER
Well	WB-01
Field	FLORENCE COPPER
County	PINAL
State	ARIZONA

Final **GCFTC Summary**

APPENDIX F

Cement Bond Log Summary

WELL WB-01 — Geophysical Log Summary

COMPANY:	FLORENCE COPPER COMPANY	Logging Engineer:	VARIOUS
FIELD:	FLORENCE COPPER SITE	Date Logged:	VARIOUS
WELL ID:	WB-01	Processed By:	K.M / B.C.
COUNTY:	PINAL STATE: ARIZONA	Date Processed:	07-17-18

Southwest Exploration Services, LLC
borehole geophysics & video services

HALEY ALDRICH

WB-01 Sonic CBL with Density Summary

Depth
1in:20ft

Nat. Gamma — Cased 4-13-18
0 API 200

3-Arm Caliper — Cased 4-13-18
3 Inches 7

Comp Density — Cased 4-13-18
0 g/cc 4

Compensation — Cased 4-13-18
-3 g/cc 1

RX1 - VDL (60mm) — Open 3-30-18
100 uSec 1000

RX1 - TT (60mm) — Open 3-30-18
100 uSec 1000

RX1 - VDL — Cased 4-13-18
100 uSec 1020

RX1 - TT — Cased 4-13-18
100 uSecc 1020

RX4 - VDL — Cased 4-13-18
100 uSec 1020

RX4 - TT — Cased 4-13-18
100 uSec 1020

Velocity Analysis — Cased 4-13-18
40 us/ft 220

P-Wave Slow — Cased 4-13-18
40 us/ft 220

Steel
40 us/ft 220

FRP
40 us/ft 220

PVC
40 us/ft 220

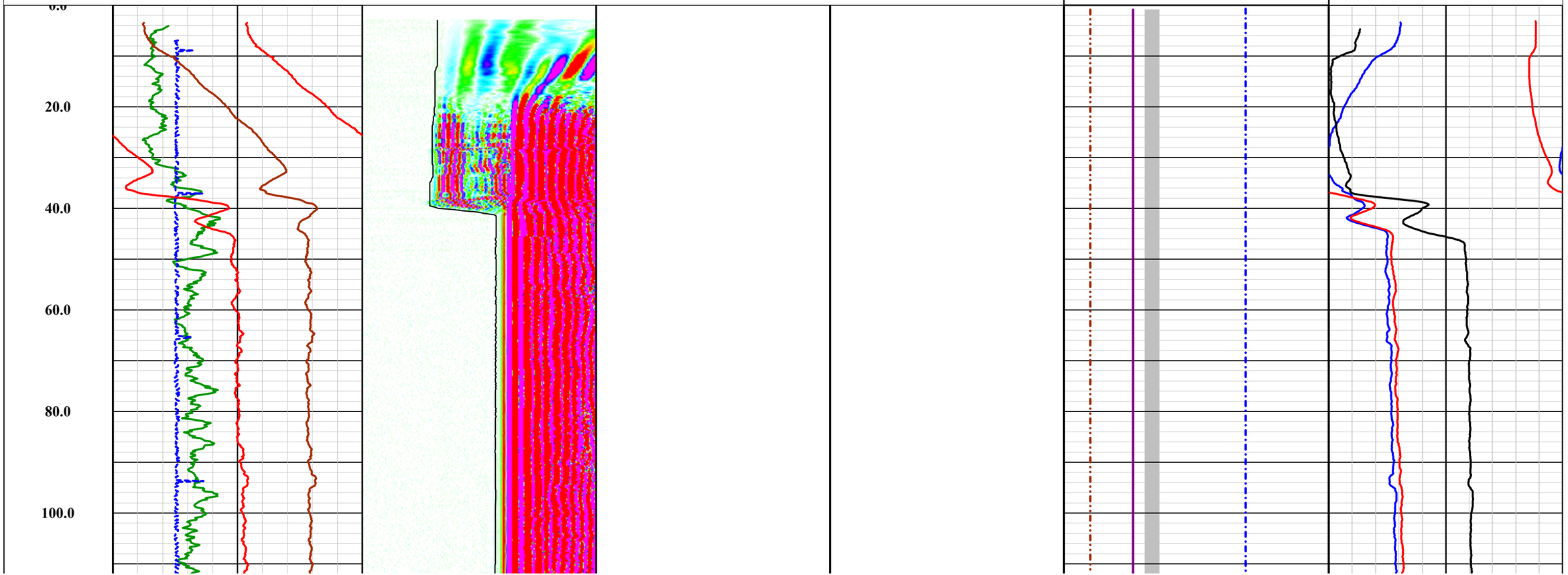
Cement

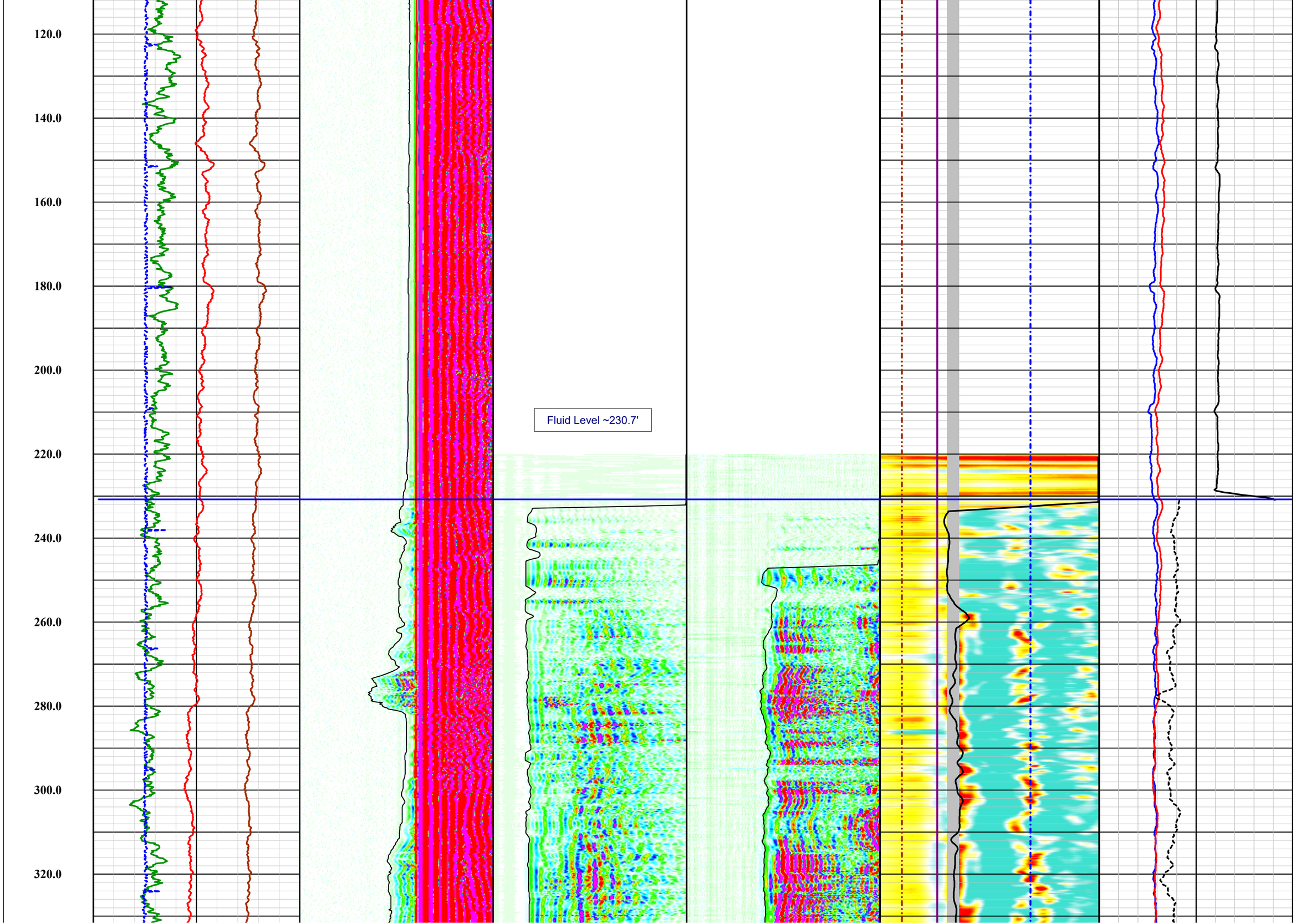
Near Density — Cased 4-13-18
1 g/cc 4

Far Density — Cased 4-13-18
1 g/cc 4

4 Pi Density (Dry) — Cased 4-13-18
2000 CPS 0

4 Pi Density (Wet) — Cased 4-13-18
300 CPS 0

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180.0
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220.0
240.0
260.0
280.0
300.0
320.0
Fluid Level ~230.7'

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360.0

380.0

400.0

420.0

440.0

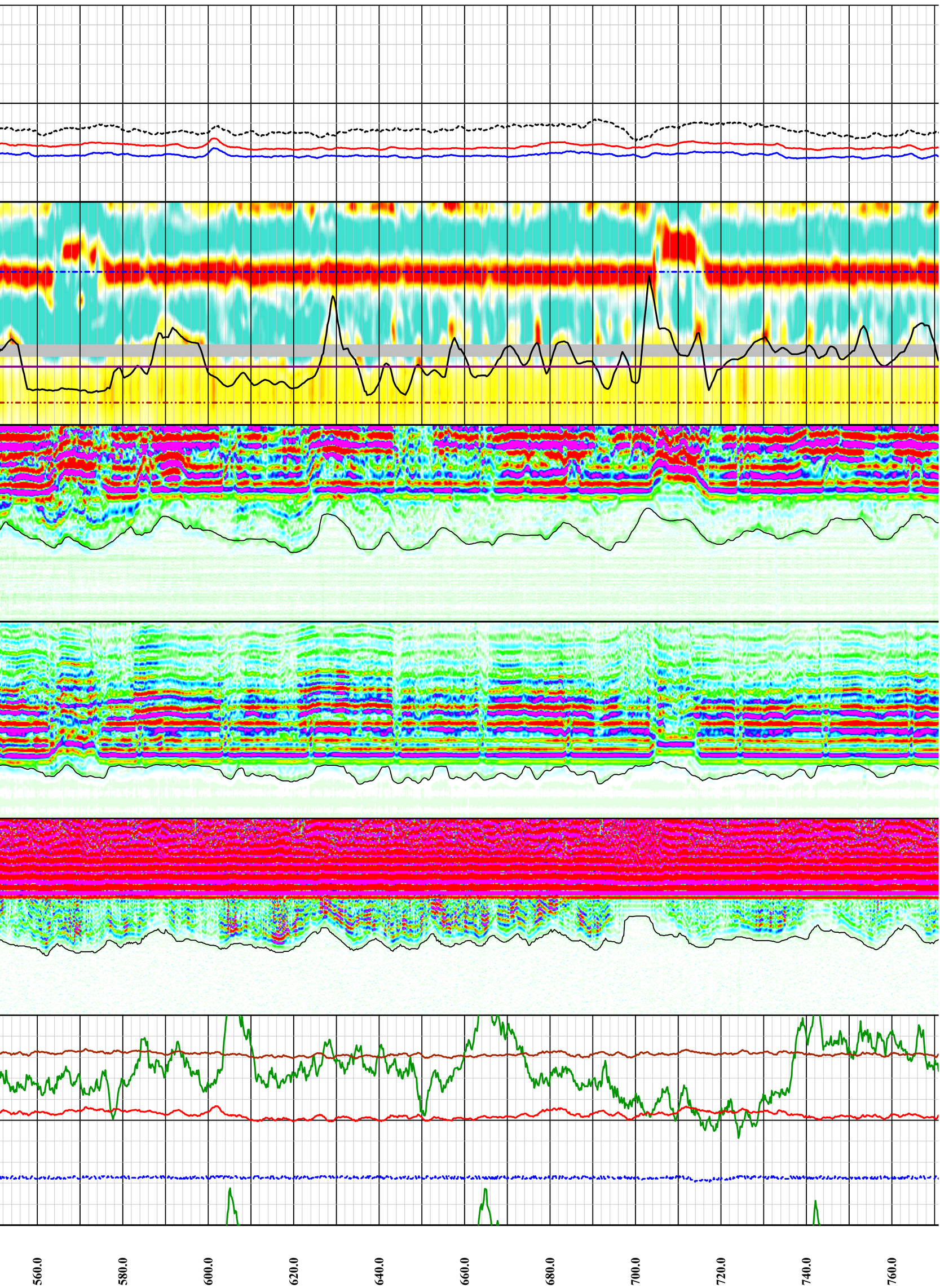
460.0

480.0

500.0

520.0

540.0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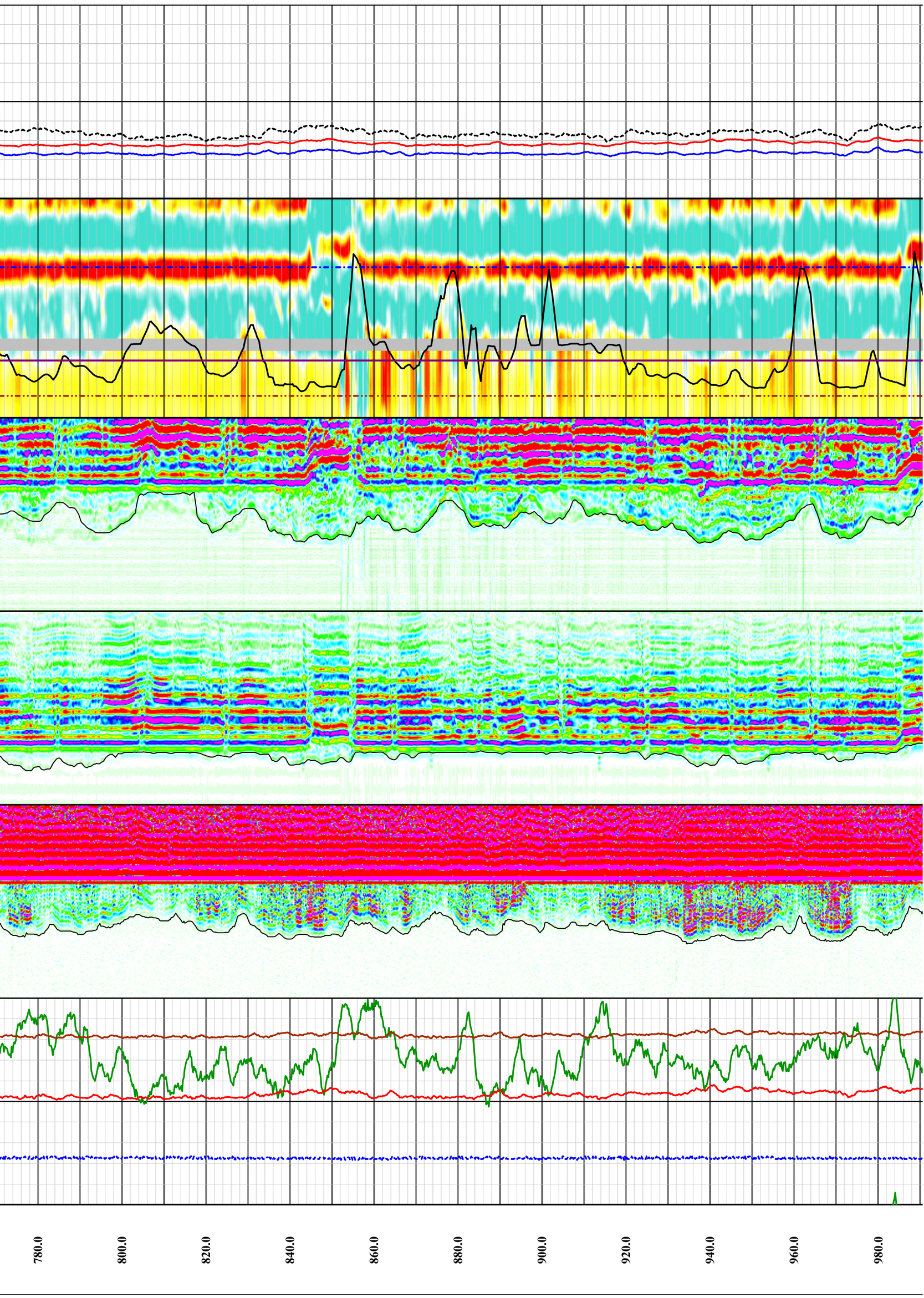
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820.0
840.0
860.0
880.0
900.0
920.0
940.0
960.0
980.0

1000.0

1020.0

1040.0

1060.0

1080.0

1100.0

1120.0

1140.0

1160.0

1180.0

1200.0

Version 4-19-18, RECC

					Cement	
					40 us/ft 220 PVC	300 CPS 0 Cased 4-13-18 4 Pi Density (Wet)
	-3 g/cc 1 Cased 4-13-18 Compensation				40 us/ft 220 FRP	2000 CPS 0 Cased 4-13-18 4 Pi Density (Dry)
	0 g/cc 4 Cased 4-13-18 Comp Density				40 us/ft 220 Steel	
	3 Inches 7 Cased 4-13-18 3-Arm Caliper	100 uSec 1000 Open 3-30-18 RX1 - TT (60mm)	100 uSecc 1020 Cased 4-13-18 RX1 - TT	100 uSec 1020 Cased 4-13-18 RX4 - TT	40 us/ft 220 Cased 4-13-18 P-Wave Slow	1 g/cc 4 Cased 4-13-18 Far Density
	0 API 200 Cased 4-13-18 Nat. Gamma	100 uSec 1000 Open 3-30-18 RX1 - VDL (60mm)	100 uSec 1020 Cased 4-13-18 RX1 - VDL	100 uSec 1020 Cased 4-13-18 RX4 - VDL	40 us/ft 220 Cased 4-13-18 Velocity Analysis	1 g/cc 4 Cased 4-13-18 Near Density
1in:20ft Depth	WB-01 Sonic CBL with Density Summary					

APPENDIX G

SAPT Documentation

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
STANDARD ANNULAR PRESSURE TEST

Operator FLORENCE COPPER, INC
Address 1575 W. HUNT HWY
FLORENCE, AZ 85132
Well Name WB-01

State Permit No. P-101704
USEPA Permit No. R9UIC-AZ3-FY11-1
Date of Test 4/12/2018
Well Type MONITORING - Class III

LOCATION INFORMATION SW Quarter of the NE Quarter of the SW Quarter of Section 28; Range 9E; Township 4S; County PINAL;

Company Representative IAN REAM; Field Inspector LAUREN CANDREVA;

Type of Pressure Gauge Pressure transducer with data logger inch face; 300 psi full scale; 0.001 psi increments;

New Gauge? Yes ☑ No ☐ If no, date of calibration ____ Calibration certification submitted? Yes ☐ No ☑

TEST RESULTS
Readings must be taken at least every 10 minutes for a minimum of 30 minutes for Class II, III and V wells and 60 minutes for Class I wells.
For Class II wells, annulus pressue should be at least 300 psig. For Class I wells, annulus pressure should be the greater of 300 psig or 100 psi above maximum permitted injection pressure.
Original chart recordings must be submitted with this form.

5-year or annual test on time? Yes ☐ No ☑
2-year test for TA'd wells on time? Yes ☐ No ☑
After rework? Yes ☐ No ☑
Newly permitted well? Yes ☑ No ☐

Pressure (in psig)

Time	Annulus	Tubing
12:00	149.84	same
12:10	150.04	same
12:20	150.51	same
19:05	150.98	same

Casing size 4" - NOMINAL
Tubing size 2"
Packer type INLFATABLE PACKER
Packer set @ 4.76(top), 482.96(bottom)
Top of Permitted Injection Zone 417
Is packer 100 ft or less above top of Injection Zone ? Yes ☑ No ☐
If not, please submit a justification.
Fluid return (gal.) 0.41
Comments: Data included for one test, total of two test conducted to confirm results - attached chart includes both tests

Test Pressures: Max. Allowable Pressure Change: Initial test pressure x 0.05 7.49 psi
Test Period Pressure change 1.14 psi

Test Passed ☑ Test Failed ☐

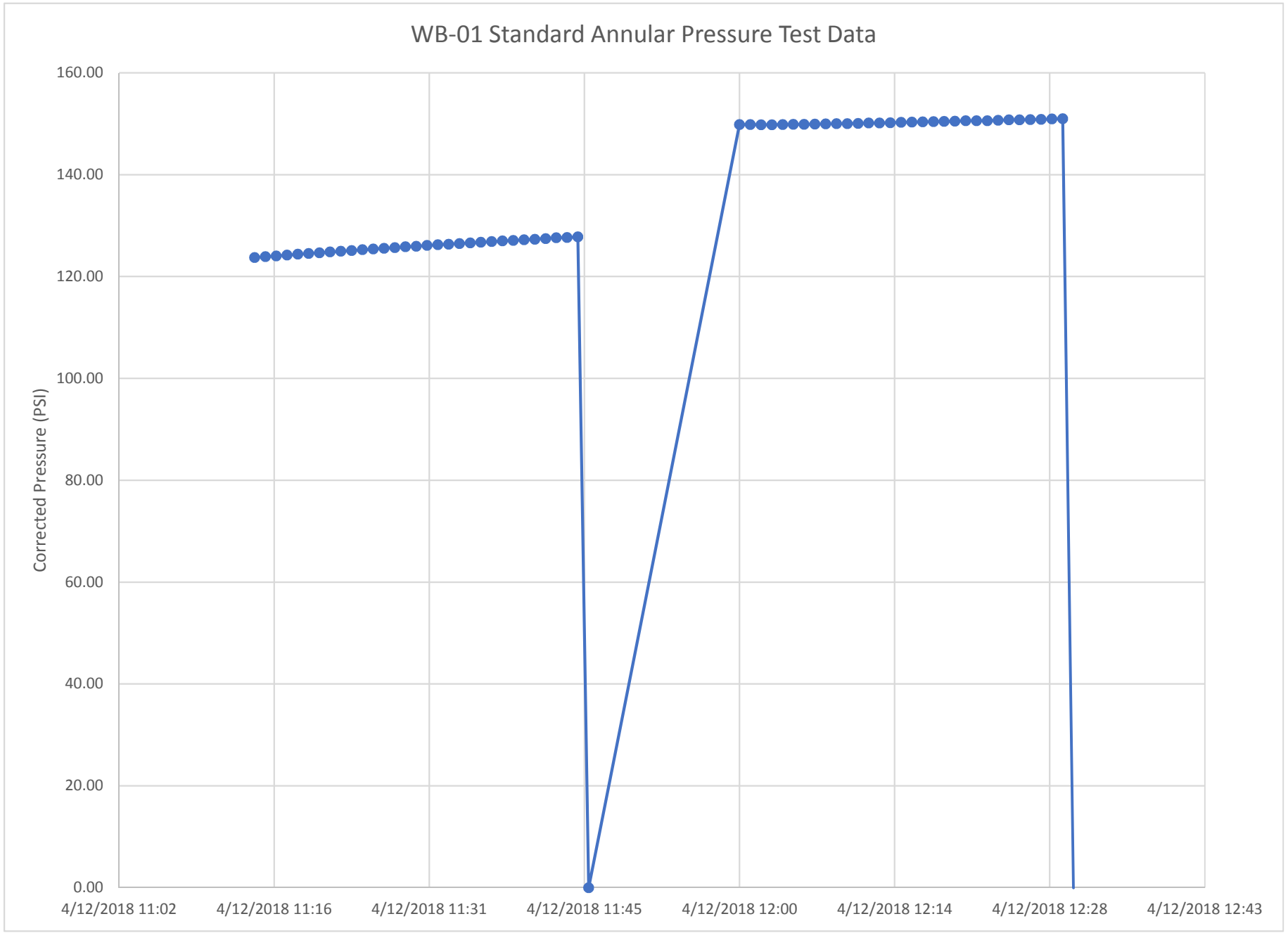
If failed test, well must be shut in, no injection can occur, and USEPA must be contacted within 24 hours. Corrective action needs to occur, the well retested, and written authorization received before injection can recommence.

I certify under penalty of law that this document and all attachments are, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. (See 40 CFR 144.32(d))

Ian Ream
Printed Name of Company Representative

Signature of Company Representative

9-12-2018
Date


WB-01 Standard Annular Pressure Test Data
Corrected Pressure (PSI)
160.00
140.00
120.00
100.00
80.00
60.00
40.00
20.00
0.00
4/12/2018 11:02
4/12/2018 11:16
4/12/2018 11:31
4/12/2018 11:45
4/12/2018 12:00
4/12/2018 12:14
4/12/2018 12:28
4/12/2018 12:43

Well WB-01 SAPT Data		
Tranducer Serial Number:	554227	
Tranducer Model:	Level TROLL 400 non-vented 300 psi	
Date and Time	Pressure (PSI)	Corrected Presssure (PSI) (Sensor pressure - barometric pressure)
4/12/2018 11:15	137.675	123.74
4/12/2018 11:16	137.861	123.93
4/12/2018 11:17	137.978	124.05
4/12/2018 11:18	138.174	124.24
4/12/2018 11:19	138.326	124.39
4/12/2018 11:20	138.457	124.52
4/12/2018 11:21	138.604	124.67
4/12/2018 11:22	138.782	124.85
4/12/2018 11:23	138.9	124.97
4/12/2018 11:24	139.031	125.10
4/12/2018 11:25	139.215	125.28
4/12/2018 11:26	139.345	125.41
4/12/2018 11:27	139.466	125.53
4/12/2018 11:28	139.604	125.67
4/12/2018 11:29	139.778	125.85
4/12/2018 11:30	139.87	125.94
4/12/2018 11:31	140.063	126.13
4/12/2018 11:32	140.179	126.25
4/12/2018 11:33	140.29	126.36
4/12/2018 11:34	140.4	126.47
4/12/2018 11:35	140.529	126.60
4/12/2018 11:36	140.667	126.73
4/12/2018 11:37	140.808	126.88
4/12/2018 11:38	140.921	126.99
4/12/2018 11:39	141.022	127.09
4/12/2018 11:40	141.158	127.23
4/12/2018 11:41	141.225	127.29
4/12/2018 11:42	141.398	127.47
4/12/2018 11:43	141.545	127.61
4/12/2018 11:44	141.598	127.67
4/12/2018 11:45	141.739	127.81
4/12/2018 11:46	13.933	0.00
4/12/2018 12:00	163.771	149.84
4/12/2018 12:01	163.761	149.83
4/12/2018 12:02	163.753	149.82
4/12/2018 12:03	163.735	149.80
4/12/2018 12:04	163.783	149.85
4/12/2018 12:05	163.838	149.91
4/12/2018 12:06	163.833	149.90
4/12/2018 12:07	163.866	149.93
4/12/2018 12:08	163.924	149.99

Well WB-01 SAPT Data		
Tranducer Serial Number:	554227	
Tranducer Model:	Level TROLL 400 non-vented 300 psi	
Date and Time	Pressure (PSI)	Corrected Presssure (PSI) (Sensor pressure - barometric pressure)
4/12/2018 12:09	163.933	150.00
4/12/2018 12:10	163.969	150.04
4/12/2018 12:11	164.006	150.07
4/12/2018 12:12	164.092	150.16
4/12/2018 12:13	164.081	150.15
4/12/2018 12:14	164.145	150.21
4/12/2018 12:15	164.21	150.28
4/12/2018 12:16	164.254	150.32
4/12/2018 12:17	164.299	150.37
4/12/2018 12:18	164.353	150.42
4/12/2018 12:19	164.394	150.46
4/12/2018 12:20	164.439	150.51
4/12/2018 12:21	164.505	150.57
4/12/2018 12:22	164.538	150.61
4/12/2018 12:23	164.538	150.61
4/12/2018 12:24	164.631	150.70
4/12/2018 12:25	164.703	150.77
4/12/2018 12:26	164.724	150.79
4/12/2018 12:27	164.758	150.83
4/12/2018 12:28	164.804	150.87
4/12/2018 12:29	164.88	150.95
4/12/2018 12:30	164.913	150.98
4/12/2018 12:31	13.914	-0.02

APPENDIX H

Well Development Field Forms

Rig 1

DEVELOPMENT FIELD DATA LOG

Project Name: FCI PTF	Project No.: 129687
Well No.: WB-01	Date: 4-5-18 - 4/6/18
Location: Florence AZ	Measuring Point: —
Total Depth of Well (ft bls): 1175	Screen Interval (ft bls):
Pump Type/Setting (ft bls): Airlift	Activity: Airlift
How Q Measured: 5 gal → estimates	H&A Personnel: C Price & GE

Time	Discharge (gpm)	Pumping Water Level (ft)	Specific Capacity (gpm/ft)	Sand Content (ppm)	pH	Sp. Cond. (µmhos/cm)	Temp. °C	Turbidity NTU	Comments
1750	ON								
1817	~3-5	NM	—	0	8.40	2240	28.34	OOR	Slick w/ polymer
1830	~5		—	0	8.38	2235	28.24	OOR	Slick
1845	2		—	0	8.29	2084	28.95	OOR	
2000	3		—	0	8.26	1848	23.19	OOR	
2019	4			0	8.14	1883	24.79	440	
2030	5			0	8.16	1848	24.42	372	Sl. Slick
2100	2			0	8.23	1857	24.14	250	"
2130	3			0	8.17	1837	24.06	250	"
2200	3			0	8.15	1840	23.60	157	OK to move down
2250	8			0	7.99	1892	23.92	116	~600' Sl. Slick
0035	8			0	8.08	1782	22.58	88.6	Sl. Slick
0125	8			0	8.09	1787	22.81	66.3	Sl. Slick
0200	8			0	8.09	1770	22.87	62.9	OK to Drop on
0420	10			0	7.94	1829	23.66	89.4	@ 800' Sl. Slick
0500	10			0	8.11	1769	22.36	50.9	"
0530	10			0	8.10	1779	22.73	34.6	"
0615	10			0	8.16	1850	23.37	28.8	ready to drop to ~1000, clear
0626									air off, moving down
0817									air on, @ 1000',
0822	~12			0	8.06	1867	23.72	40.5	Sl. cloudy
0832	~12			0	8.09	1744	24.27	54.9	Sl. cloudy
0902	~12			0	8.10	1849	24.99	29.2	clear
0915	~12			0	8.12	1846	25.09	38.0	clear
0918									air off,
0933									air on, @ 1030
0937	~12			0	8.15	1861	25.57	61.6	cloudy
0945									Air off, moving down to ~1150'

Comments:

HALEY ALDRICH

DEVELOPMENT
FIELD DATA LOG

Project Name: FCI PTF	Project No.: 129687
Well No.: WB-01	Date: 4-6-18 + 4/7/2018
Location: Florence AZ	Measuring Point:
Total Depth of Well (ft bls): 1175	Screen Interval (ft bls):
Pump Type/Setting (ft bls): Air lift	Activity: Air lift
How Q Measured:	H&A Personnel: C Price + M. Cote (MAC)

Time	Discharge (gpm)	Pumping Water Level (ft)	Specific Capacity (gpm/ft)	Sand Content (ppm)	pH	Sp. Cond. ~~(μmhos/cm)~~ uS/cm	Temp. °C	Turbidity NTU	Comments	
1055									Air on, 1150'	
1103	~10			<0.1	8.18	1861	26.54	30.7	clear	
1200	~10			~0	8.22	1863	26.63	46.1	clear 1165'	
1206	~10	Fine sand		~150	8.09	1891	26.49	OR	Brown, 1170'	
1240	~10			<0.1	8.10	1864	26.38	35.4	clear 1170'	
1305	~10			0.0	8.16	1847	26.56	23.1	clear 1170'	
1400	~10			0.0	8.19	1879	27.07	180.0	Cloudy 1174'	
1430	~10			<0.1	8.20	1857	26.71	159.0	cloudy 1174'	
1530	~10			0.0	8.17	1861	25.54	53.1	clear 1174	
1535									air off, end air lift,	
		39 gallons (total) chlorine) injected + swabbed 4/6/2018								
0753 (4/7/2018)	Began @ 1100 ∓ 243.4'								Total Cl_2 (mg/L) Free Cl_2 (mg/L)	
0803	14	1100		15	9.85	5251	25.01	410	4.40 Red 0.00	cloudy
0823	14	1100		<0.2	8.41	4188	25.35	192	4.40 Red 0.00	cloudy
0853	13	1100		0.0	8.15	3179	25.12	57.3	1.33 pink 0.00	clear
0923	13	1100		0.0	8.07	2686	25.92	32.2	4.40 pink —	clear
0953	13	1100		0.0	7.97	2277	25.67	49.3	4.40 pink —	clear
1023	13	1100		0.0	8.00	2190	25.77	33.4	4.40 pink —	clear
1053	13	1100		0.0	8.09	2155	25.66	28.4	4.40 pink —	clear.
1123	13	1100		0.0	7.97	2127	26.27	38.0	4.40 pink —	clear.
1153	13	1100		0.0	8.02	2072	25.78	33.9	4.40 pink —	Clear.
1223	13	1100		0.0	7.94	2027	25.87	40.6	4.40 pink —	clear
1253	13	1100		0.0	7.87	2030	25.94	19.4	4.40 pink —	clear
1323	13	1100		0.0	7.99	2018	25.91	17.6	4.05 pink —	clear
1353	13	1100		0.0	7.92	2024	25.85	30.5	4.40 pink —	clear
1423	14	1100		0.0	8.06	2064	26.01	23.0	4.40 pink —	clear
1453	14	1100		0.0	7.99	2012	26.09	28.2	4.40 pink —	clear
1523	14	1100		0.0	8.03	2039	26.15	44.7	4.40 pink —	clear

Comments:

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HALEY ALDRICH

4/4

DEVELOPMENT
FIELD DATA LOG

Project Name: FCI - PTF	Project No.: 129687
Well No.: WB-01	Date: 4/7/2018
Location: Florence, AZ	Measuring Point:
Total Depth of Well (ft bls): 1175	Screen Interval (ft bls):
Pump Type/Setting (ft bls): 1100	Activity: pump (out-chlorine)
How Q Measured: totalizer + stopwatch	H&A Personnel: M. Cote (MMC)

Time	Discharge (gpm)	Pumping Water Level (ft)	Specific Capacity (gpm/ft)	Sand Content (ppm)	pH	Sp. Cond. (µmhos/cm) mS/cm	Temp. °C	Turbidity NTU	Comments: Total Chlorine (mg/L)		Free Cl2 (mg/L)	
1553	14	1100	NM	0.0	7.98	2009	26.01	45.5	4.40	[pink]	—	clear
1623	14	1100	NM	0.0	7.90	2027	25.85	30.8	4.40	pink	—	
1653	14	1100	NM	0.0	8.05	2016	26.18	19.5	4.40	pink	—	
1723	14	1100	NM	0.0	7.97	1980	25.64	15.6	4.40	pink	—	
1753	14	1100	NM	0.0	7.95	1995	25.83	21.8	4.40	pink	—	
1830	14	1100	NM	0.0	7.85	1977	25.73	17.5	4.40	pink	—	
1900	14	1100	NM	0.0	7.80	1934	25.48	15.3	4.40	pink	—	
1930	14	1100	NM	0.0	7.76	1918	25.37	16.5	4.80	pink	—	
2030	14	1100	NM	0.0	7.74	1898	24.89	11.2	4.40	pink	—	
2240	14	1100	NM	0.0	7.84	1902	24.33	11.0	3.30	pink	—	
0000	14	1100	NM	0.0	7.69	1843	24.12	6.01	1.63	pink	—	
0115	14	1100	NM	0.0	7.89	1860	23.14	6.39	4.40	pink	—	
0215	14	1100	NM	0.0	7.79	1855	24.11	6.65	3.76	pink	—	
0315	14	1100	NM	0.0	7.80	1863	24.25	5.62	4.25	pink	—	
0500	14	1100	NM	0.0	7.86	1878	24.21	6.05	4.40	pink	—	
0530	14	1100	NM	0.0	7.90	1893	24.26	4.67	4.40	pink	—	
0600	14	1100	NM	0.0	7.84	1893	24.47	5.64	4.40	pink	—	clear
0630	14	1100	NM	0.0	7.86	1914	24.90	7.98	4.40	pink	—	
0700	14	1100	NM	0.0	7.81	1897	24.93	6.61	3.57	pink	—	
0730	14	1100	NM	0.0	7.83	1904	25.27	5.58	4.40	pink	—	
0800	14	1100	NM	0.0	7.84	1930	25.46	7.83	4.40	pink	—	
0830	14	1100	NM	0.0	7.86	1931	29.47	7.15	—		—	clear
0900	14	1100	NM	0.0	7.91	1915	25.56	7.93	—		—	clear
0930	14	1100	NM	0.0	7.96	1925	25.28	6.88	—		—	clear
1000	14	1100	NM	0.0	7.85	1966	25.68	6.55	—		—	clear
1030	14	1100	NM	0	7.97	1973	25.26	7.93	—		—	clear
1100	14	1100	NM	0	7.93	1969	25.52	6.15	—		—	clear
1130	13	1100	NM	0	7.88	1907	25.66	7.13	4.40	pink	—	clear

Comments:

7251.3'

HALEY ALDRICH

DEVELOPMENT
FIELD DATA LOG

Project Name: FCI - PTF	Project No.: 129687
Well No.: WB-01	Date: 4/8/2018 + 4/9/2018
Location: Florence AZ	Measuring Point:
Total Depth of Well (ft bls): ~~1300~~ 1175	Screen Interval (ft bls):
Pump Type/Setting (ft bls): 1100 / 550 as noted	Activity: pump (out chlorine)
How Q Measured: ~~totalizer~~ + stopwatch	H&A Personnel: M. Cole (MMC) + C.T. + Snow

Time	Discharge (gpm)	Pumping Water Level (ft)	Specific Capacity (gpm/ft)	Sand Content (ppm)	pH	Sp. Cond. (µmhos/cm)	Temp. °C	Turbidity NTU	Comments: Total Cl2 (mg/L)	Comments: Free Cl2 (mg/L)	
1200	~~10~~ 13	1100	NM	0	7.86	1987	26.74	16.9	4.40 [pink]	water is clear	
1230	~~10~~ 13	1100	NM	0	7.85	1922	25.72	8.24	—		
1300	~~10~~ 13	1100	NM	0	8.07	1956	25.32	6.94	—		
1330	~~10~~ 13	1100	NM	0	7.81	1943	25.58	13.9	4.40 [pink]		
1400	~~10~~ 13	1100	NM	0	7.95	1958	25.74	15.0	4.01 [pink]		
1430	~~10~~ 13	1100	NM	0	7.92	1954	25.93	13.2	—		
1500	~~10~~ 13	1100	NM	0	7.90	1933	25.80	5.27	4.40 [pink]		
1530	~~10~~ 13	1100	NM	0	7.89	1960	25.48	11.6	—		
1600	13	1100	NM	0	7.79	1942	25.77	5.91	—		
1630	13	1100	NM	0	7.88	1927	25.45	8.44	—		
1700	13	1100	NM	0	7.82	1925	25.60	12.2	—		
1730	13	1100	NM	0	7.77	1927	25.61	18.6	4.40 [pink]		
1800	13	1100	NM	0	7.83	1891	25.42	7.05	—		
1830	13	1100	Nm	0	7.76	1889	25.29	5.50	4.12 [PINK]		
1900	13	1100	Nm	0	7.78	1907	24.62	3.43	4.40 pink		
1945	13	1100	Nm	0	7.84	1877	24.33	4.81	4.40 pink		
WL 255.0 2045	13	1100	0.05	0	7.77	1875	24.19	7.07	4.40 pink		
2215	13	1100	Nm	0	7.62	1857	24.24	5.12	3.82 pink		
2330	13	1100	Nm	0	7.86	1836	23.17	3.89	4.40 pink		
4/9/18 0045	14	1100	Nm	0	7.87	1848	23.51	3.52	—		
0300	14	1100	Nm	0	7.74	1782	23.15	5.10	1.62 pink		
0415	13	550	NM	0	8.13	1934	23.17	8.63	4.40 [pink]	4.40 [pink]	clear
WL 246.0 0645	13		NM	0	8.04	1906	24.42	7.31	—	—	
163770 gal 0715	13	~~246.5~~ 5	NM	0	7.82	1859	24.26	5.48	—	—	clear
0745	13	~~246.6~~ 7	0	7.80	1856	24.78	6.62	—	—	clear	
0815	13	~~247.2~~ 1	0	7.93	1924	25.15	9.31	—	—	clear	
0845	13	~~247.8~~ 3	0	7.86	1870	25.25	8.24			clear	
0915	13	~~248.0~~	0	7.95	1858	25.13	15.4				

Comments:

HALEY ALDRICH

DEVELOPMENT
FIELD DATA LOG

Project Name: FCI - PTP	Project No.: 129687
Well No.: MW-01	Date: 7/9/2019
Location: Florence, AZ	Measuring Point:
Total Depth of Well (ft bls): ~~[illegible]~~ 495	Screen Interval (ft bls):
Pump Type/Setting (ft bls): 350	Activity: pump (not cleaned)
How Q Measured: totalizer + stopwatch	H&A Personnel: MAC

Time	Discharge (gpm)	Pumping Water Level (ft)	Specific Capacity (gpm/ft)	Sand Content (ppm)	pH	Sp. Cond. (umhos/cm) mS/cm	Temp. °C	Turbidity NTU	Comments: Total Cl2 (mg/L)		Free Cl2 (mg/L)	
0145												
~~0930~~	~13	~~[illegible]~~		0	2.99	1961	25.24	4.05	4.43	[pink]	4.32	[pink]
1030	~13	[illegible]		0	7.92	1931	25.30	5.54	—		—	
1100	~13	[illegible]		0	7.89	1922	25.50	10.4	—		—	
1130	~13	[illegible]		0	7.93	1914	25.41	7.18	—		—	
1200	~13	[illegible]		0	7.89	1899	25.43	10.2	—		—	
1230	~13	[illegible]		0	7.90	1898	25.51	6.09	—		—	
1330	~13	[illegible]		0	7.87	1892	25.52	3.76	—		—	
1400	~13	[illegible]		0	7.82	1881	25.58	7.33	—		—	
1430	~13	[illegible]		0	7.87	1898	25.49	6.40	—		—	
1500	~13	[illegible]		0	7.92	1914	25.49	3.95	4.48		2nd [pink]	
1530	~13	[illegible]		0	7.95	1913	25.70	5.23	—		—	
1545	~13	[illegible]		0	7.87	1914	25.92	3.79	—		—	
1645	~13	[illegible]		0	7.92	1900	25.45	11.29	—		—	
1730	~13	[illegible]		0	7.86	1919	25.74	9.52	—		—	
1800	~13	[illegible]		0	7.76	1883	25.02	5.73	4.40		—	
1900	~13	248.32		0	7.85	1869	24.58	3.09	—		—	
1930	~13	248.86		0	7.86	1859	24.79	2.91	—		—	
2000	~13	248.77		0	7.81	1856	24.83	2.72	—		—	
2030	~13	247.51		0	7.74	1840	24.55	4.46	—		—	
2100	~13	247.31		0	7.83	1832	24.02	2.75	4.39	pink	4.40	
2200	~13	245.70		0	7.81	1827	23.70	5.4	—		—	
2330	~13	246.50		0	7.77	1816	23.80	2.71	—		—	
0030	~13	246.32		0	7.62	1807	23.41	4.62	—		—	
0100	~13	246.50		0	7.88	1826	23.78	3.09	4.40	pink	4.40	
0145	~13	246.31		0	7.83	1810	23.44	2.71	—		—	
0230	~13	246.12		0	7.79	1808	23.32	4.11	—		—	
0315	~13	246.43		0	7.94	1842	23.04	3.23	—		—	
0345	~13	246.29		0	7.78	1817	23.57	2.83	—		—	

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Comments:

HALEY ALDRICH

DEVELOPMENT
FIELD DATA LOG

Project Name: FCJ - PTF	Project No.: 129687-002
Well No.: WB-01	Date: 4/10/18
Location: Florence, AZ	Measuring Point:
Total Depth of Well (ft bls): ~~1200~~ 1075	Screen Interval (ft bls):
Pump Type/Setting (ft bls): 532	Activity: Pump (out chlorine)
How Q Measured: Totalizer + Stopwatch	H&A Personnel: CTS / MAC

Time	Discharge (gpm)	Pumping Water Level (ft)	Specific Capacity (gpm/ft)	Sand Content (ppm)	pH	Sp. Cond. (µmhos/cm)	Temp. °C	Turbidity NTU	Comments: Total Cl_2 (mg/L)		Comments: Free Cl_2 (mg/L)	
0415	~13	▽246.19		0	7.75	1784	23.23	3.60	4.40	Pink	3.44	clear
0445	~13	▽246.10		0	7.82	1816	23.60	5.27	—		—	clear
0515	~13	▽246.25		0	7.88	1822	23.48	2.62	3.22		3.73	clear
0545	~13											
0615	~13	▽246.40		0	7.75	~~1794~~	23.35	2.49				clear
0645	~13	▽246.35		0	7.77	1829	23.64	2.90				clear
0715	~13	▽247.26		0	8.08	1862	24.66	4.77	4.40		3.96	
0745	~13	▽247.42		0	7.99	1892	24.90	6.84				
Missed readings due to battery failure												
0945	~13	▽246.70		0	7.95	1900	25.64	4.52				clear.
1015	~13	▽246.79		0	7.91	1883	25.69	4.10	4.40		4.08	clear
1045	~13	▽246.67		0	7.83	1880	25.78	5.64	—		—	clear
1115	~13	▽246.67		0	7.86	1886	25.78	3.11	—		—	
1145	~13	▽246.26		0	7.87	1899	26.12	4.22	—		—	
1215	~13	▽246.35		0	7.89	1901	25.96	2.82	4.40		4.40	clear
1245	~13	▽246.48		0	7.89	1893	25.99	1.60	—		—	clear
1315	~13	▽246.50		0	7.91	1894	25.91	2.32	—		—	
1345	~13	▽246.40		0	7.87	1897	25.92	4.88	—		—	clear
1415	~13	▽246.45		0	7.91	1904	25.89	3.20	3.86		4.40	clear
1445	~13	▽246.45		0	7.84	1893	26.11	1.94	—		—	
1515	~13	▽246.40		0	7.88	1903	25.91	2.52	—		—	
1545	~13	▽246.50		0	7.92	1885	25.62	2.16	—		—	clear
1615	~13	▽246.50		0	7.86	1873	25.56	3.59	2.18		4.40	clear
1645	~13	▽246.45		0	7.89	1884	25.60	1.97				clear
1715	~13	▽246.45		0	7.95	1898	25.84	1.78				
1745	~13	▽246.		0	7.82	1877	25.56	4.47	0.97		2.69	clear
1900	~13	▽246.31		0	7.78	1907	24.39	3.86	—		—	clear
2000	~13	▽		0	7.75	1877	24.14	2.74	—		—	clear

Totalizer 1056990 gal (margin note at 0715)

Comments:

C:\Users\cprice\Documents\Book1

HALEY ALDRICH

DEVELOPMENT
FIELD DATA LOG

Project Name: FCI-PTF	Project No.: 129687-007
Well No.: WB-01	Date: 4/10/18
Location: Florence, AZ	Measuring Point:
Total Depth of Well (ft bls): ~~1200~~ 1175	Screen Interval (ft bls):
Pump Type/Setting (ft bls): 550	Activity: pump (cut chlorine)
How Q Measured: totalizer + Stopwatch	H&A Personnel: CTS / MAC / ETF

Time	Discharge (gpm)	Pumping Water Level DTW (ft)	Specific Capacity (gpm/ft)	Sand Content (ppm)	pH	Sp. Cond. (µmhos/cm)	Temp. °C	Turbidity NTU	Comments: Total Cl_2 (mg/L)		Comments: Free Cl_2 (mg/L)	
2100	~13			0	7.89	1906	23.71	5.11	—		—	clear
2200	~13			0	7.80	1867	23.82	2.20	4.40	[Pink]	4.40	clear
0000	~13			0	7.77	1846	23.50	2.64	—		—	clear
~~0100~~	~~~13~~			~~0~~	~~7.67~~	~~1848~~	~~24.27~~					
0100	~13			0	7.77	1847	23.30	1.77	—		—	clear
0230	~13			0	7.94	1860	23.08	2.82	4.40	[Pink]	4.40	clear
0330	~13			0	7.79	1830	23.26	3.11	—		—	clear
0530	~13			0	7.88	1844	23.14	1.71	3.20	[PINK]	3.09	clear
0610	~13			0	7.86	1800	22.83	2.98	2.19	[pink]	4.40	clear
0640	~13			0	7.92	1855	23.74	4.98	—		—	clear
0710	~13			0	7.81	1859	23.93	1.98	4.40	[pink]	4.40	clear
0740	~13			0	7.68	1834	24.68	5.78				
0810	~13			0	7.88	1899	24.61	1.67	2.83	[pink]	4.40	clear
0840	~13			0	7.67	1845	25.18	2.72				
0910	~13			0	7.72	1888	24.93	2.43	4.40		2.86	
0940	~13			0	7.65	1883	24.93	7.72	3.00		3.52	
~~—~~					~~7.71~~	~~1896~~	~~26.01~~	~~4.42~~				
1020	~13			0	7.56	1869	25.90	2.70	1.10		0.58	
1052	~13			0	7.69	1866	26.12	3.61	0.46		0.[illegible]	
1120	~13	249.70		0	7.66	1877	26.06	1.61	1.35		1.24	
1151	~13			0	7.47	1950	26.28	1.48	0.94		0.48	
1220	~13			0	7.66	1518	25.89	3.53	0.62		0.69	
1237	Begin sampling log.											

Comments: WB-01 sampled @ 1302.

HALEY ALDRICH

APPENDIX I

Well Video Log and Gyroscopic Survey Reports

Southwest Exploration Services, LLC
borehole geophysics & video services

Southwest Exploration Services, LLC

25811 S. Arizona Avenue Chandler, AZ. 85248

Phone: (480) 926-4558 Fax: (480) 926-4579 Web: www.swexp.com

Client: Florence Copper | Survey Date: April 13, 2018

Address: | Invoice: | Run: 1

City: | Country: | **Well Name:** WB-01

Requested By: Haley and Aldrich | P.O.: | **Well Owner:**

Copy To: | Camera:

Purpose: General Inspection | Zero Datum: Top of Casing

Location: | Depth: 1200 ft. | Vehicle: 750

Field: Florence Copper

1st Csg.O.D. 4 In. | Csg Weight: | From: 0 ft. | To: 496.8 ft. | 2nd Csg.O.D. 4 In. | Csg Weight: | From: 496.8 ft | To: 1171.8 ft.

Standing Water Level: 230.4 ft. | Pumping Water Level: | Pump Depth: | O.D.Ref.: Measured | Casing Buildup: Light

Operator: A. Olson | Lat.: | Long.: | Sec: | Twp: | Rge:

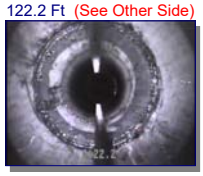
Other Information:

Wellbore Snapshots

0 Ft (See Other Side)

9.1 Ft (See Other Side)

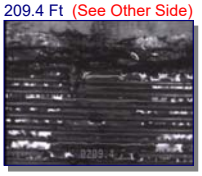
122.2 Ft (See Other Side)



122.8 Ft (See Other Side)

208.9 Ft (See Other Side)

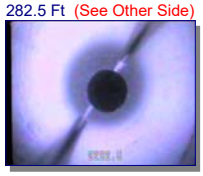
209.4 Ft (See Other Side)



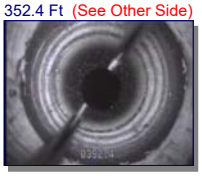
229.8 Ft (See Other Side)

230.4 Ft (See Other Side)

282.5 Ft (See Other Side)

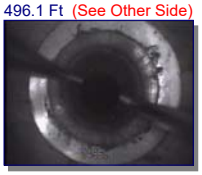


352.4 Ft (See Other Side)



495.2 Ft (See Other Side)

496.1 Ft (See Other Side)



True Depths: (SideScan-Feet)	WELLBORE / CASING INFORMATION
0	Zero Point - Top of Casing
9.1	Side scan of FG joint
122.2	Downhole view of FG casing and joint transition
122.8	Side scan of FG joint
208.9	Downhole view of FG casing / joint
209.4	Side scan of FG joint
229.8	Downhole view of SWL
230.4	Side scan of Static Water Level
282.5	Downhole view of blank casing - moderate visibility
352.4	Downhole view of FG casing / joint - good visibility
495.2	Downhole view of FG casing - good visibility with minor particualtes
496.1	Downhole view of SS transtion from FG to PVC

Notes:

12 WELLBORE SHAPSHOTS

0 Ft (Enlargement)

9.1 Ft (Enlargement)

122.2 Ft (Enlargement)

122.8 Ft (Enlargement)

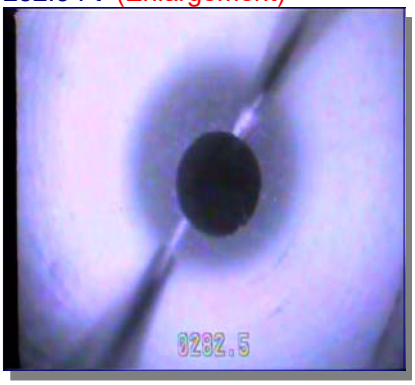
208.9 Ft (Enlargement)

209.4 Ft (Enlargement)

229.8 Ft (Enlargement)

230.4 Ft (Enlargement)

282.5 Ft (Enlargement)



352.4 Ft (Enlargement)

495.2 Ft (Enlargement)

496.1 Ft (Enlargement)

Southwest Exploration Services, LLC
borehole geophysics & video services

Southwest Exploration Services, LLC
25811 S. Arizona Avenue Chandler, AZ. 85248
Phone: (480) 926-4558 Fax: (480) 926-4579 Web: www.swexp.com

Client: Florence Copper | Survey Date: April 13, 2018

Address: | Invoice: | Run: 1

City: | Country: | **Well Name:** WB-01

Requested By: Haley and Aldrich | P.O.: | **Well Owner:**

Copy To: | Camera:

Purpose: General Inspection | Zero Datum: Top of Casing

Location: | Depth: 1200 ft. | Vehicle: 750

Field: Florence Copper

1st Csg.O.D. 4 In. | Csg Weight: | From: 0 ft. | To: 496.8 ft. | 2nd Csg.O.D. 4 In. | Csg Weight: | From: 496.8 ft | To: 1171.8 ft.

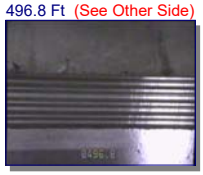
Standing Water Level: 230.4 ft. | Pumping Water Level: | Pump Depth: | O.D.Ref.: Measured | Casing Buildup: Light

Operator: A. Olson | Lat.: | Long.: | Sec: | Twp: | Rge:

Other Information:

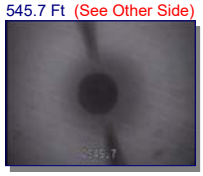
Wellbore Snapshots

496.8 Ft (See Other Side)

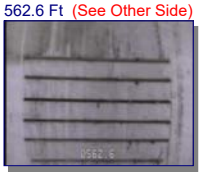


517.1 Ft (See Other Side)

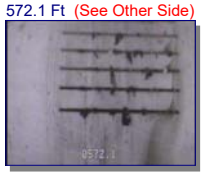
545.7 Ft (See Other Side)



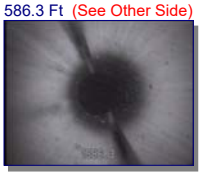
562.6 Ft (See Other Side)



572.1 Ft (See Other Side)



586.3 Ft (See Other Side)



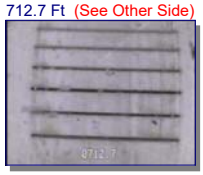
624 Ft (See Other Side)

662.1 Ft (See Other Side)

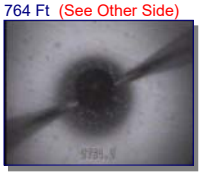
703.2 Ft (See Other Side)

708.8 Ft (See Other Side)

712.7 Ft (See Other Side)



764 Ft (See Other Side)



True Depths: (SideScan-Feet)	WELLBORE / CASING INFORMATION
496.8	Side scan of FG to PVC transition
517.1	Downhole view in blank PVC - visibility ok
545.7	Same as above - poor visibility
562.6	Top Perf Section 1 - side scan
572.1	Bottom Perf Section 1 - side scan
586.3	Downhole view in blank PVC
624	Side scan in blank PVC
662.1	Downhole view of PVC with casing joint - good visibility
703.2	Top Perf Section 2 - side scan
708.8	Downhole view of perforations - open and in good condition / visibility
712.7	Bottom Perf Section 2 - side scan
764	Downhole view in blank PVC - moderate visibility with increasing particulates

Notes:

12 WELLBORE SHAPSHOTS

496.8 Ft (Enlargement)

517.1 Ft (Enlargement)

545.7 Ft (Enlargement)

562.6 Ft (Enlargement)

572.1 Ft (Enlargement)

586.3 Ft (Enlargement)

624 Ft (Enlargement)

662.1 Ft (Enlargement)

703.2 Ft (Enlargement)

708.8 Ft (Enlargement)

712.7 Ft (Enlargement)

764 Ft (Enlargement)

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Phone: (480) 926-4558 Fax: (480) 926-4579 Web: www.swexp.com

Client: Florence Copper | Survey Date: April 13, 2018

Address: | Invoice: | Run: 1

City: | Country: | **Well Name:** WB-01

Requested By: Haley and Aldrich | P.O.: | **Well Owner:**

Copy To: | Camera:

Purpose: General Inspection | Zero Datum: Top of Casing

Location: | Depth: 1200 ft. | Vehicle: 750

Field: Florence Copper

1st Csg.O.D. 4 In. | Csg Weight: | From: 0 ft. | To: 496.8 ft. | 2nd Csg.O.D. 4 In. | Csg Weight: | From: 496.8 ft | To: 1171.8 ft.

Standing Water Level: 230.4 ft. | Pumping Water Level: | Pump Depth: | O.D.Ref.: Measured | Casing Buildup: Light

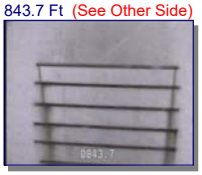
Operator: A. Olson | Lat.: | Long.: | Sec: | Twp: | Rge:

Other Information:

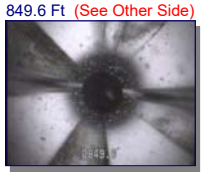
Wellbore Snapshots

822.8 Ft (See Other Side)

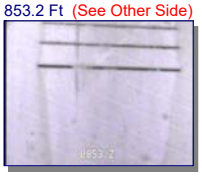
843.7 Ft (See Other Side)



849.6 Ft (See Other Side)



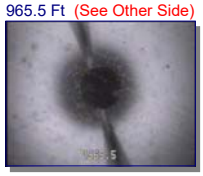
853.2 Ft (See Other Side)



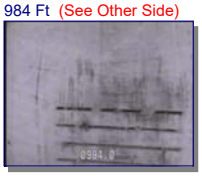
856.8 Ft (See Other Side)

923 Ft (See Other Side)

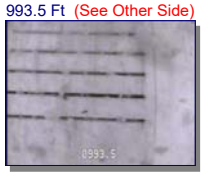
965.5 Ft (See Other Side)



984 Ft (See Other Side)



993.5 Ft (See Other Side)



1063.5 Ft (See Other Side)

1084.4 Ft (See Other Side)

1103.4 Ft (See Other Side)

True Depths: (SideScan-Feet)	WELLBORE / CASING INFORMATION
822.8	Downhole view in blank PVC with joint
843.7	Top of Perf 3 - side scan
849.6	Downhole view of perfs - perfs are dirty here, visibility still good
853.2	Bottom of Perf 3 - side scan
856.8	Downhole view in blank PVC - well is murky with poor visibility
923	Downhole view with joint visible - visibilty improved from above
965.5	Downhole view
984	Top of Perf 4 - side scan
993.5	Bottom of Perf 4 - side scan - perforations open with minor gravel pack visible plugging perfs
1,063.5	Downhole view of casing joint
1,084.4	Side scan of casing joint
1,103.4	Downhole viewin blank PVC with casing joint visible

Notes:

12 WELLBORE SHAPSHOTS

822.8 Ft (Enlargement)

843.7 Ft (Enlargement)

849.6 Ft (Enlargement)

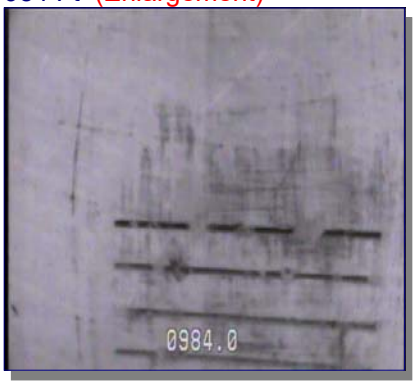
853.2 Ft (Enlargement)

856.8 Ft (Enlargement)

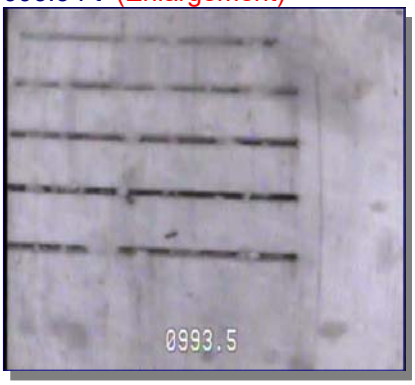
923 Ft (Enlargement)

965.5 Ft (Enlargement)

984 Ft (Enlargement)



993.5 Ft (Enlargement)



1063.5 Ft (Enlargement)

1084.4 Ft (Enlargement)

1103.4 Ft (Enlargement)

Southwest Exploration Services, LLC
borehole geophysics & video services

Southwest Exploration Services, LLC
25811 S. Arizona Avenue Chandler, AZ. 85248
Phone: (480) 926-4558 Fax: (480) 926-4579 Web: www.swexp.com

Client: Florence Copper | Survey Date: April 13, 2018

Address: | Invoice: | Run: 1

City: | Country: | **Well Name:** WB-01

Requested By: Haley and Aldrich | P.O.: | **Well Owner:**

Copy To: | Camera:

Purpose: General Inspection | Zero Datum: Top of Casing

Location: | Depth: 1200 ft. | Vehicle: 750

Field: Florence Copper

1st Csg.O.D. 4 In. | Csg Weight: | From: 0 ft. | To: 496.8 ft. | 2nd Csg.O.D. 4 In. | Csg Weight: | From: 496.8 ft | To: 1171.8 ft.

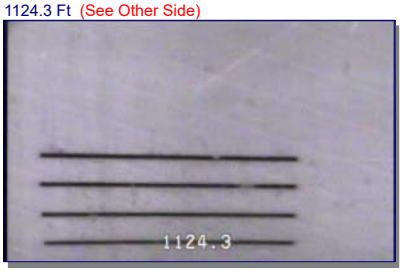
Standing Water Level: 230.4 ft. | Pumping Water Level: | Pump Depth: | O.D.Ref.: Measured | Casing Buildup: Light

Operator: A. Olson | Lat.: | Long.: | Sec: | Twp: | Rge:

Other Information:

Wellbore Snapshots

1124.3 Ft (See Other Side)



1124.3 Ft (See Other Side)

1133.7 Ft (See Other Side)

1171.8 Ft (See Other Side)

True Depths: (SideScan-Feet)	WELLBORE / CASING INFORMATION
1,124.3	Top Perf 5 - side scan
1,124.3	Downhole view of perforations - open and in good condition
1,133.7	Bottom Perf 5 - side scan
1,171.8	Side scan of TD of well

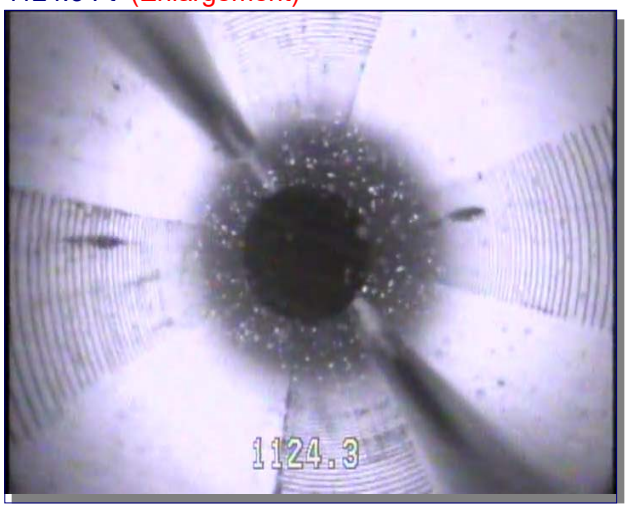
Notes:

Page Number: 7

4 WELLBORE SHAPSHOTS

1124.3 Ft (Enlargement)

1124.3 Ft (Enlargement)



1133.7 Ft (Enlargement)

1171.8 Ft (Enlargement)

Drift Report

Wellbore DRIFT Interpretation

PREPARED ESPECIALLY FOR

Florence Copper and Florence Copper

WB-01

Friday - April 13, 2018

Southwest Exploration Services, LLC
borehole geophysics and video services

Southwest Exploration Services, LLC
(480) 926-4558

WELLBORE DRIFT INTERPRETATION

Southwest Exploration Services, LLC

(480) 926-4558

Company: Florence Copper **Well Owner:** Florence Copper

County: Pinal **State:** Arizona **Country:** United States

Well Number: WB-01 **Survey Date:** Friday - April 13, 2018 **Magnetic Declination:** Declination Correction Not Used

Field: Florence Copper Project **Drift Calculation Methodology:** Balanced Tangential Method

Location:

Remarks:

Witness: H&A **Vehicle No.:** 800 **Invoice No.:** **Operator:** E. BEAM **Well Depth:** 1175 Feet **Casing size:** 4 Inches

Tool: Gyro - 1422 **Lat.:** **Long.:** **Sec.:** **Twp.:** **Rge.:**

MEASURED DATA			DATA COMPUTATIONS						
DEPTHS, feet	INCLINATIONS, degrees	AZIMUTHS, degrees	TVD, feet	T. LATITUDE, feet	T. LONGITUDE, feet	DOGLEG SEV., degrees per 20 Feet	DOGLEG SEV., degrees per 100 feet	DRIFT DIST., feet	DRIFT BGR., degrees
0	0.29	292.23	0.00						
20	0.03	275.05	19.99	0.020	-0.052	1.00	1.06	0.06' (.72")	290.60
40	0.17	320.89	39.98	0.043	-0.076	0.41	2.77	0.09' (1.08")	299.80
60	0.15	341.58	59.97	0.091	-0.103	0.96	1.28	0.14' (1.68")	311.40
80	0.20	320.07	79.96	0.143	-0.134	0.84	1.33	0.20' (2.40")	316.90
100	0.30	331.23	99.96	0.216	-0.182	0.42	0.69	0.28' (3.36")	319.90
120	0.28	340.57	119.95	0.308	-0.223	0.13	0.58	0.38' (4.56")	324.00
140	0.10	047.89	139.94	0.366	-0.226	0.43	3.94	0.43' (5.16")	328.30
160	0.18	332.40	159.93	0.406	-0.228	0.83	4.36	0.47' (5.64")	330.70
180	0.34	019.42	179.92	0.490	-0.223	0.95	2.84	0.54' (6.48")	335.50
200	0.28	354.74	199.91	0.595	-0.208	0.37	1.52	0.63' (7.56")	340.70
220	0.27	027.19	219.90	0.686	-0.191	1.00	1.99	0.71' (8.52")	344.40
240	0.37	096.94	239.89	0.720	-0.105	1.00	4.07	0.73' (8.76")	351.70
260	0.18	034.04	259.88	0.738	-0.023	0.34	3.71	0.74' (8.88")	358.20
280	0.06	320.07	279.87	0.772	-0.012	0.93	4.28	0.77' (9.24")	359.10
300	0.25	350.35	299.86	0.823	-0.026	0.78	1.86	0.82' (9.84")	358.20
320	0.27	342.30	319.85	0.911	-0.048	0.53	0.50	0.91' (10.92")	357.00
340	0.36	007.18	339.84	1.018	-0.054	0.00	1.53	1.02' (12.24")	356.90

True Vertical Depth: 1174.31' **Final Drift Distance:** 1.34' (16.08") **Final Drift Bearing:** 139.00°

Note: Magnetic Declination is not used because it is not a factor in the calculation of well drift or alignment. Magnetic Declination is only important if attempting to hit a target or miss another well and then it is included in the calculations.

WELLBORE DRIFT INTERPRETATION

Southwest Exploration Services, LLC

WB-01

(480) 926-4558

MEASURED DATA			DATA COMPUTATIONS						
DEPTHS, feet	INCLINATIONS, degrees	AZIMUTHS, degrees	TVD, feet	T. LATITUDE, feet	T. LONGITUDE, feet	DOGLEG SEV., degrees per 20 Feet	DOGLEG SEV., degrees per 100 feet	DRIFT DIST., feet	DRIFT BRG., degrees
360	0.17°	035.93°	359.83	1.104	-0.029	0.56	1.77	1.10' (13.20")	358.50
380	0.35°	332.87°	379.82	1.182	-0.039	0.73	3.72	1.18' (14.16")	358.10
400	0.34°	347.36°	399.81	1.294	-0.080	0.88	0.90	1.30' (15.60")	356.50
420	0.32°	058.31°	419.80	1.381	-0.045	0.20	4.13	1.38' (16.56")	358.10
440	0.17°	065.22°	439.79	1.423	0.029	0.97	0.43	1.42' (17.04")	001.20
460	0.08°	020.77°	459.78	1.448	0.061	0.96	2.69	1.45' (17.40")	002.40
480	0.18°	018.91°	479.77	1.491	0.076	0.12	0.12	1.49' (17.88")	002.90
500	0.25°	335.92°	499.76	1.561	0.068	0.81	2.61	1.56' (18.72")	002.50
520	0.34°	036.63°	519.75	1.648	0.086	0.59	3.60	1.65' (19.80")	003.00
540	0.57°	074.79°	539.74	1.722	0.217	0.73	2.33	1.74' (20.88")	007.20
560	0.12°	311.02°	559.73	1.762	0.297	0.28	6.28	1.79' (21.48")	009.60
580	0.24°	018.25°	579.72	1.816	0.294	0.77	3.94	1.84' (22.08")	009.20
600	0.32°	103.28°	599.71	1.843	0.361	0.49	4.81	1.88' (22.56")	011.10
620	0.14°	153.94°	619.70	1.808	0.426	0.69	3.04	1.86' (22.32")	013.30
640	0.10°	326.14°	639.69	1.801	0.427	0.13	7.10	1.85' (22.20")	013.30
660	0.10°	318.07°	659.68	1.828	0.406	0.83	0.50	1.87' (22.44")	012.50
680	0.09°	172.22°	679.67	1.825	0.396	0.80	6.80	1.87' (22.44")	012.30
700	0.16°	184.59°	699.66	1.782	0.396	0.25	0.77	1.83' (21.96")	012.50
720	0.35°	168.35°	719.65	1.694	0.406	0.54	1.01	1.74' (20.88")	013.50
740	0.27°	184.29°	739.64	1.587	0.415	0.24	0.99	1.64' (19.68")	014.60
760	0.27°	170.78°	759.63	1.493	0.419	0.94	0.84	1.55' (18.60")	015.70
780	0.21°	194.80°	779.62	1.411	0.417	0.65	1.48	1.47' (17.64")	016.50
800	0.24°	085.03°	799.61	1.379	0.449	0.97	5.82	1.45' (17.40")	018.00
820	0.33°	082.87°	819.60	1.390	0.548	0.06	0.13	1.49' (17.88")	021.50
840	0.49°	118.81°	839.59	1.356	0.680	0.29	2.20	1.52' (18.24")	026.60
860	0.61°	171.52°	859.58	1.209	0.771	0.57	3.16	1.43' (17.16")	032.50
880	0.31°	181.46°	879.57	1.050	0.785	0.47	0.62	1.31' (15.72")	036.80
900	0.40°	149.51°	899.56	0.936	0.819	0.42	1.96	1.24' (14.88")	041.20
920	0.46°	169.75°	919.55	0.797	0.869	0.69	1.25	1.18' (14.16")	047.50
940	0.35°	185.64°	939.54	0.657	0.877	0.04	0.98	1.10' (13.20")	053.20
960	0.61°	182.57°	959.53	0.490	0.866	0.30	0.19	1.00' (12.00")	060.50
980	0.09°	132.91°	979.52	0.373	0.873	0.98	2.99	0.95' (11.40")	066.90
1,000	0.37°	173.54°	999.52	0.298	0.892	0.95	2.47	0.94' (11.28")	071.50

True Vertical Depth: 1174.31' **Final Drift Distance: 1.34' (16.08")** **Final Drift Bearing: 139.00°**

WELLBORE DRIFT INTERPRETATION

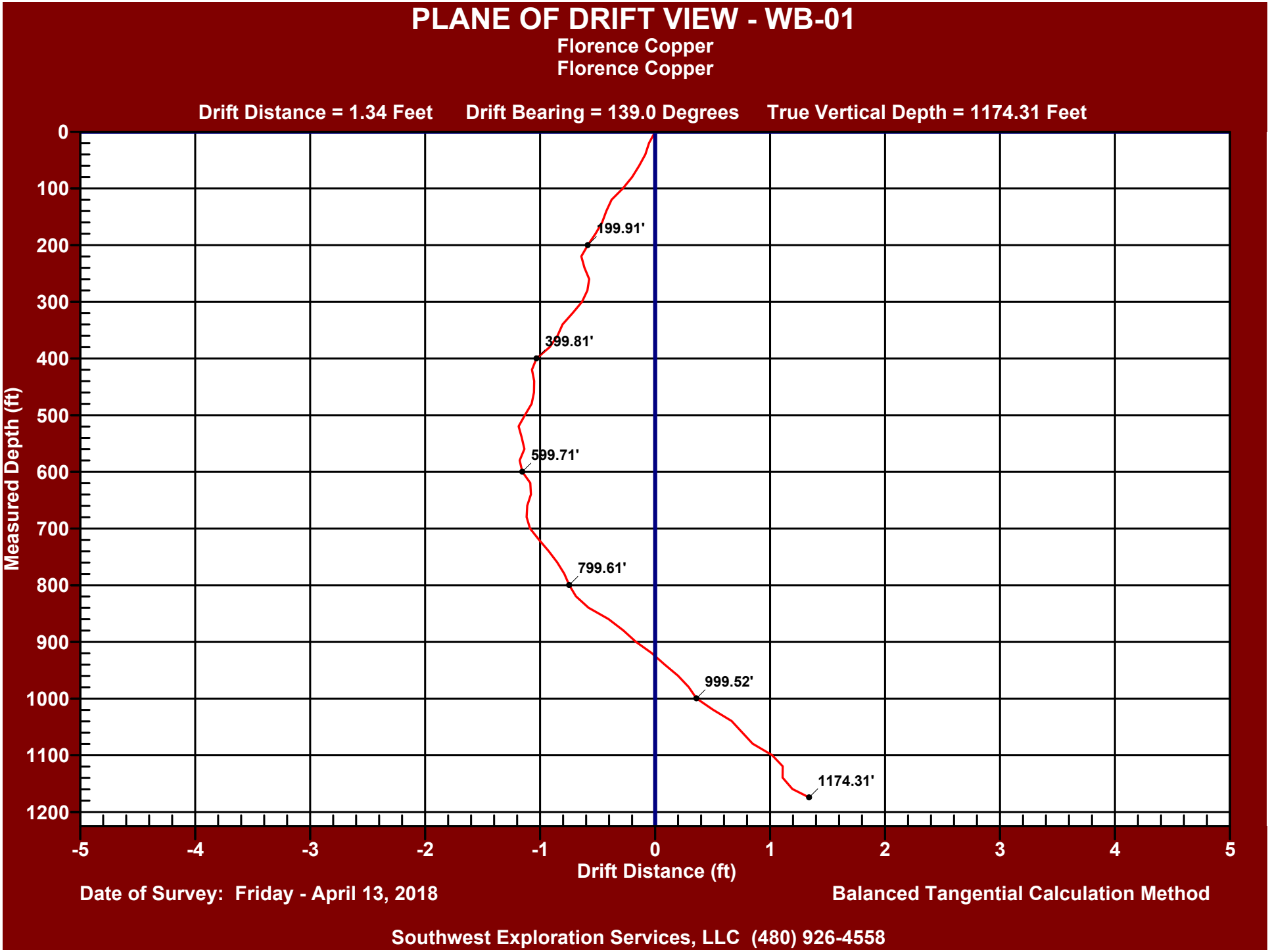
Southwest Exploration Services, LLC

WB-01

(480) 926-4558

MEASURED DATA			DATA COMPUTATIONS						
DEPTHS, feet	INCLINATIONS, degrees	AZIMUTHS, degrees	TVD, feet	T. LATITUDE, feet	T. LONGITUDE, feet	DOGLEG SEV., degrees per 20 Feet	DOGLEG SEV., degrees per 100 feet	DRIFT DIST., feet	DRIFT BRG., degrees
1,020	0.66°	176.22°	1,019.51	0.119	0.907	0.96	0.17	0.91' (10.92")	082.50
1,040	0.57°	186.95°	1,039.50	-0.095	0.903	0.46	0.67	0.91' (10.92")	096.00
1,060	0.20°	181.74°	1,059.49	-0.229	0.890	0.25	0.32	0.92' (11.04")	104.40
1,080	0.38°	146.83°	1,079.48	-0.319	0.925	0.92	2.13	0.98' (11.76")	109.00
1,100	0.69°	168.98°	1,099.47	-0.493	0.984	0.09	1.37	1.10' (13.20")	116.60
1,120	0.34°	240.83°	1,119.46	-0.640	0.955	0.16	4.17	1.15' (13.80")	123.80
1,140	0.16°	208.17°	1,139.45	-0.694	0.890	0.98	2.00	1.13' (13.56")	127.90
1,160	0.61°	179.26°	1,159.44	-0.825	0.878	0.54	1.78	1.20' (14.40")	133.20
1,175	0.83°	180.11°	1,174.31	-1.012	0.879	0.37	0.07	1.34' (16.08")	139.00

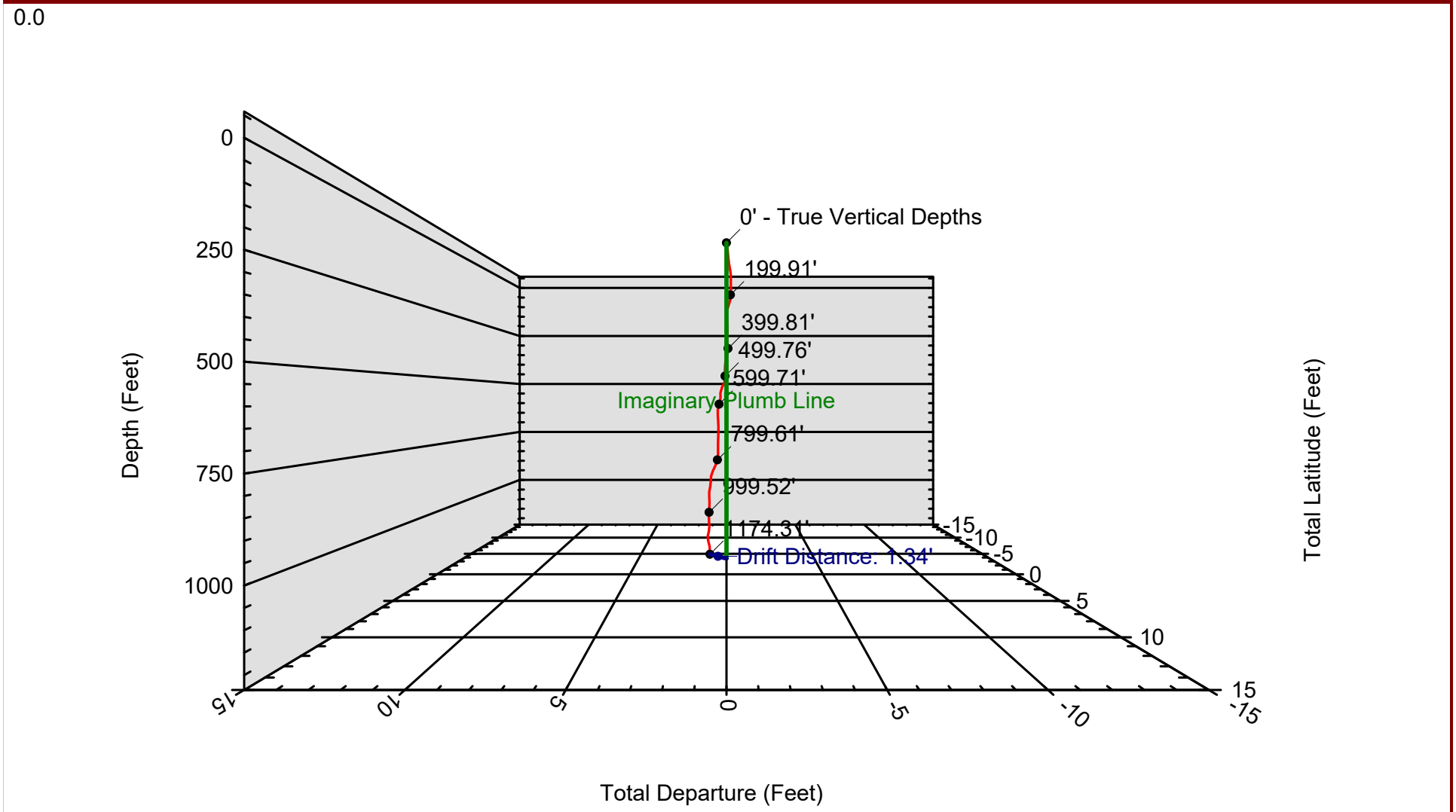
Page No. 3 **True Vertical Depth: 1174.31'** **Final Drift Distance: 1.34' (16.08")** **Final Drift Bearing: 139.00°**


PLANE OF DRIFT VIEW - WB-01
Florence Copper
Florence Copper
Drift Distance = 1.34 Feet
Drift Bearing = 139.0 Degrees
True Vertical Depth = 1174.31 Feet
Measured Depth (ft)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
199.91'
399.81'
599.71'
799.61'
999.52'
1174.31'
-5
-4
-3
-2
-1
0
1
2
3
4
5
Drift Distance (ft)
Date of Survey: Friday - April 13, 2018
Balanced Tangential Calculation Method
Southwest Exploration Services, LLC (480) 926-4558

3D PROJECTION VIEW - WB-01

Florence Copper
Florence Copper

Drift Distance = 1.34 Feet **Drift Bearing = 139.0 Degrees** **True Vertical Depth = 1174.31 Feet**



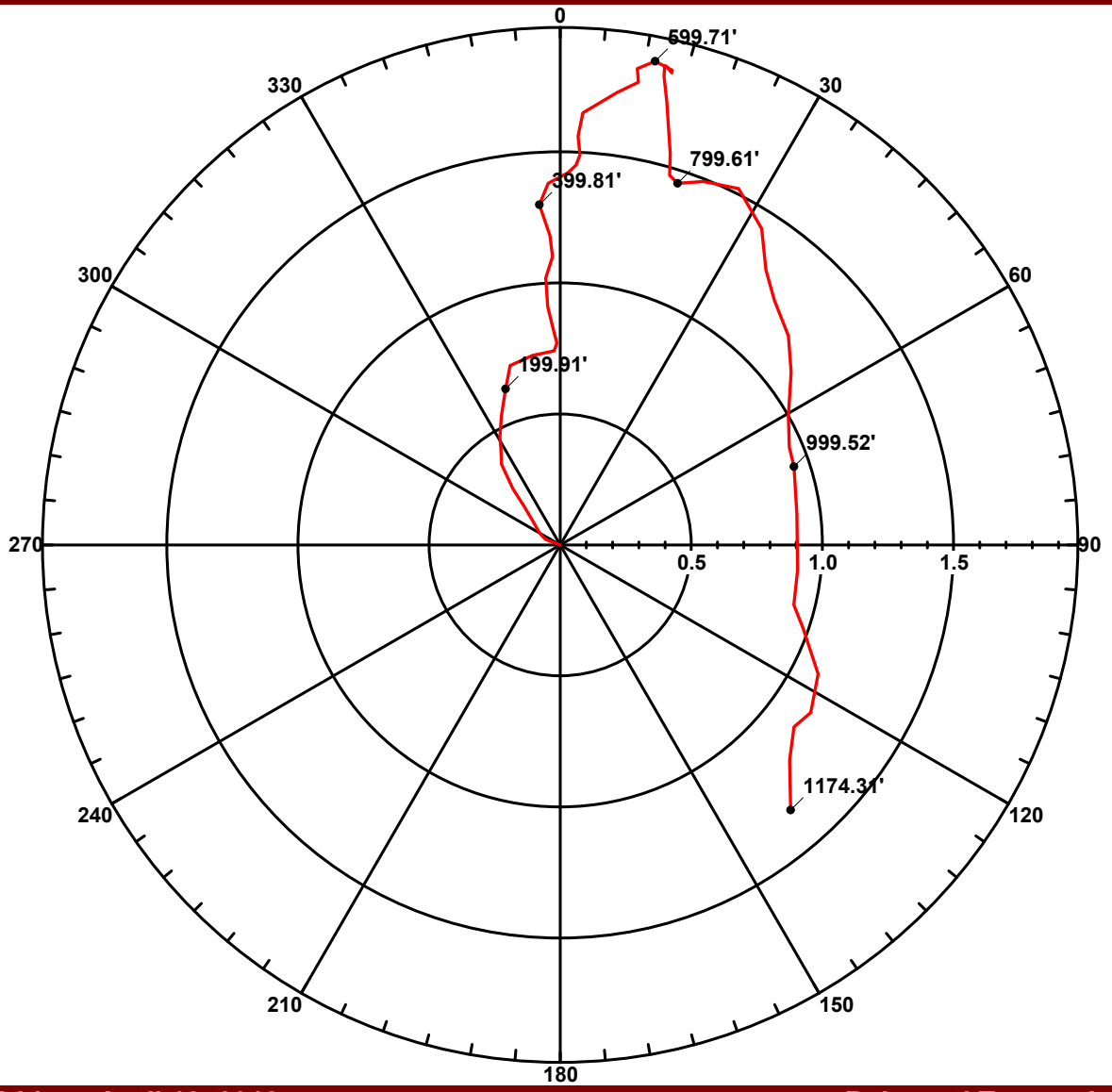
Date of Survey: Friday - April 13, 2018 **Balanced Tangential Calculation Method**

Southwest Exploration Services, LLC (480) 926-4558

POLAR VIEW - WB-01

Florence Copper
Florence Copper

Drift Distance = 1.34 Feet Drift Bearing = 139.0 Degrees True Vertical Depth = 1174.31 Feet



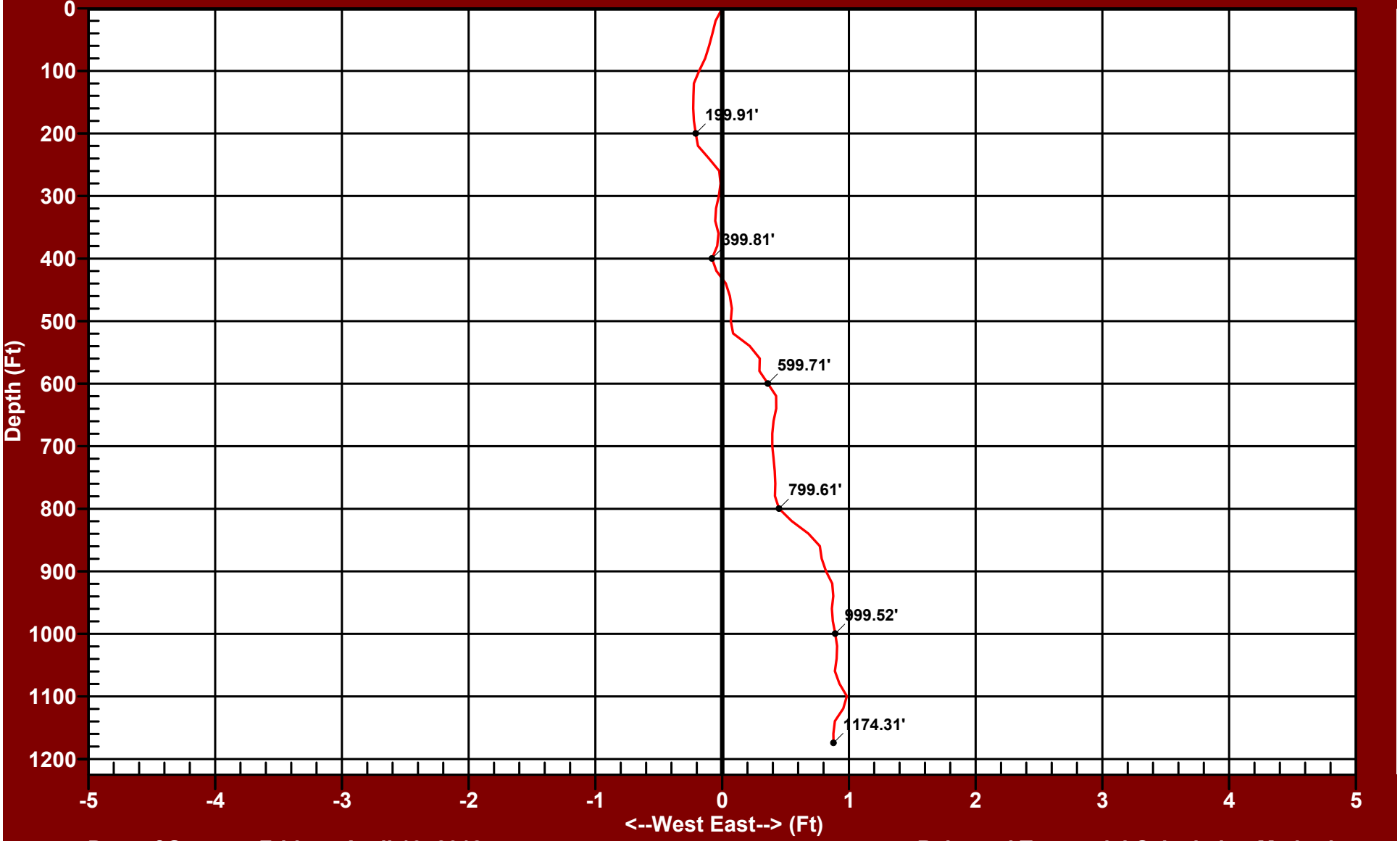
Date of Survey: Friday - April 13, 2018 **Balanced Tangential Calculation Method**

Southwest Exploration Services, LLC (480) 926-4558

EASTING RECTANGULAR VIEW - WB-01

Florence Copper
Florence Copper

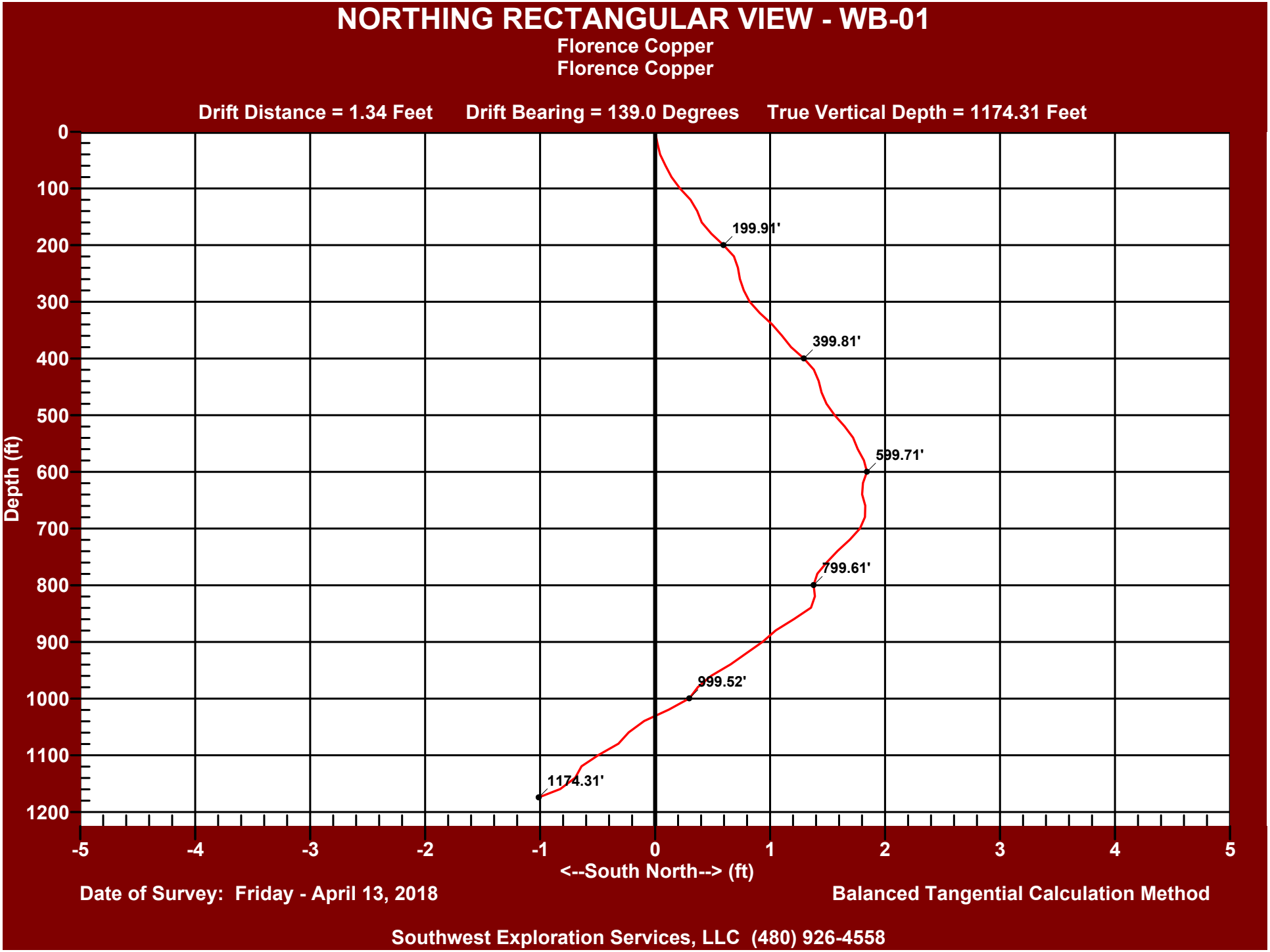
Drift Distance = 1.34 Feet Drift Bearing = 139.0 Degrees True Vertical Depth = 1174.31 Feet



Date of Survey: Friday - April 13, 2018

Balanced Tangential Calculation Method

Southwest Exploration Services, LLC (480) 926-4558

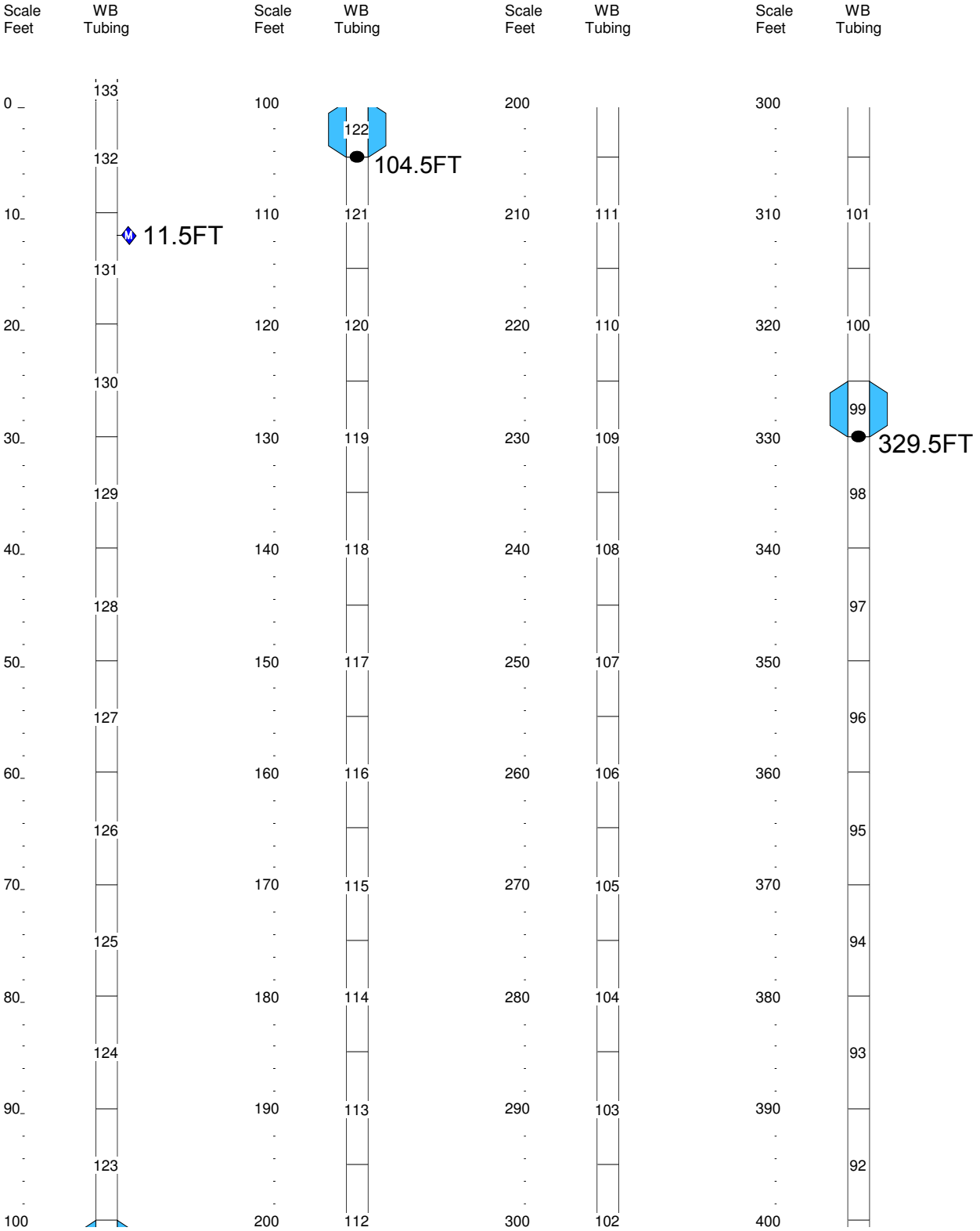

NORTHING RECTANGULAR VIEW - WB-01
Florence Copper
Florence Copper
Drift Distance = 1.34 Feet
Drift Bearing = 139.0 Degrees
True Vertical Depth = 1174.31 Feet
Depth (ft)
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
199.91'
399.81'
599.71'
799.61'
999.52'
1174.31'
-5
-4
-3
-2
-1
0
1
2
3
4
5
<--South North--> (ft)
Date of Survey: Friday - April 13, 2018
Balanced Tangential Calculation Method
Southwest Exploration Services, LLC (480) 926-4558

APPENDIX J

Downhole Equipment

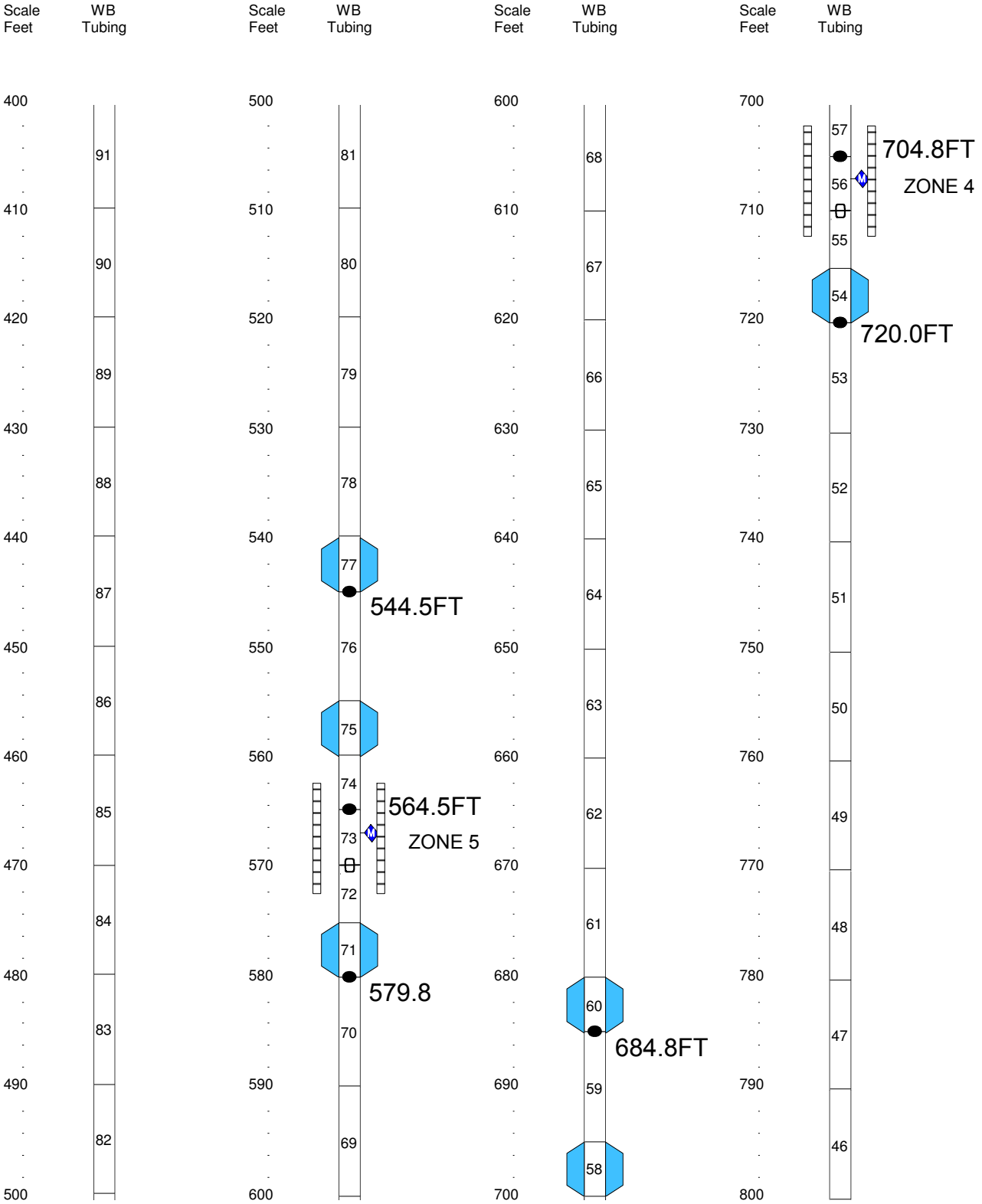
Summary Completion Log
Florence Copper Inc.

Job No: WB957
Well: WB-01



Summary Completion Log
Florence Copper Inc.

Job No: WB957
Well: WB-01



Summary Completion Log
Florence Copper Inc.

Job No: WB957
Well: WB-01